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PROGRESS IN PHYSICAL MEDICINE AND REHABILITATION

CHAIRMAN'S ADDRESS

Walter M. Solomon, M.D., Cleveland

The specialty of physical medicine and rehabilitation has made great strides during the past few years. The different types of therapy included in this field are not new; many of them are perhaps the oldest in the field of the healing art; however, in the past years these methods have been employed empirically or unwisely, often without materially helping the patient. More recently, through the efforts of many physiatrists, these measures have been utilized more effectively and extensively. The physiatrist, too, has been responsible for arousing greater interest on the part of the medical profession in the different forms of therapy, whether in the specific agents, in the kinds of therapy included in occupational therapy, or in the use of all the principles now referred to as "medical rehabilitation." Most of the best medical schools have established departments of physical medicine and rehabilitation with physiatrists in charge. This is an important sign of recognition. In these schools, programs are directed toward the better care of patients, toward educating both the undergraduates and the graduates, and toward research and clinical investigations. The number of new departments of physical medicine and rehabilitation that are now found in hospitals is a further measure of progress. Today nearly all hospitals in sizeable communities have physical therapy departments at least, whereas many now have departments where all the facilities of physical medicine and rehabilitation are available. Many communities, too, have large and well-staffed rehabilitation centers where patients are given the most comprehensive care.

Research and clinical investigations during the past 10 years have helped to evaluate many forms of therapy and their methods; for example, the simple heating lamp can now be prescribed with definite precision for greater therapeutic effect, including specific directions as to the wattage, the length of exposure and the area, and the optimum distance between lamp and patient. The physiological changes produced by deep-heating apparatus, such as the short-wave and micro-wave diathermy, are now better known. Recent studies question the therapeutic value of massage, although it has been employed for centuries. Hydrotherapy has been investigated in all of its various aspects. The renewed interest in and a better understanding of different spas will undoubtedly produce a greater and a more rational use of these therapeutic potentials. The physical, chemical, and biological effects of ultrasonic energies are currently being studied to determine the best and safest use of this newest physical agent. Therapeutic exercises have been evaluated clinically and in the laboratories. Valuable information on the rate of bood flow, the energy costs, flow of lymph, changes in muscle structure and strength, and the effect on organs of the body is now available. The diagnosis of muscular disorders and denervation and reinnervation of muscles has been improved by the use of electromyography. This newer diagnostic method has not replaced the well-known and other simple electrodiagnostic testing, but it is complementary to them in determining the diagnosis and prognosis. The list could be expanded to practically all of the physical agents. The services and techniques in the broader field of rehabilitation are being critically evaluated. Much investigative work in all phases of the specialty is still needed, but a review of the accomplishments during these past few years certainly is encouraging.

TREATMENT OF PATIENTS

The development of physical medicine and rehabilitation has extended into the care of many patients, but it is for patients with subacute and chronic diseases and disorders that its results are most outstanding. Special facilities and techniques for this large group of patients are provided. The rheumatic diseases might well head the list of chronic disorders. These include patients with rheumatoid arthritis who, in spite of receiving tremendous assistance from the use of steroids, still require the physical measures and rehabilitation forces. For the much larger group of patients with degenerative joint disease or osteoarthritis, the comprehensive facilities of this specialty offer not only many effective measures to relieve the symptoms but, perhaps more important, also methods that will prevent further progression of the disease.

From the Cleveland Clinic Foundation, and the Frank E. Bunts Educational Institute.
Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.

Patients with neuromuscular disorders constitute one of the largest groups for which physical medicine and rehabilitation has become preeminent, and first among these are patients with anterior poliomyelitis. Treatment for these patients begins immediately and continues throughout the months of convalescence. Cerebral palsy is another chronic disorder affecting many young patients, for which, fortunately, interest has recently been aroused. Better functioning and happier adjustments for patients have resulted from the extensive programs now available. Physiatrists alone are not responsible for improving the lives of these patients, and incidentally those of their families, but, with other specialists, they do share in the results that have been accomplished. Other large numbers of patients with neurological diseases for which physical medicine and rehabilitation has special considerations are those with Bell's palsy, multiple sclerosis, Guillain-Barré syndrome, and neuropathies from various causes. Not the least important of the neurological conditions is hemiplegia—one of the greatest and most trying disabilities both in old and young. Most of the large number of patients with traumatic conditions that result in partial or total disability can be restored to some form of usefulness by physical agents, and, for those patients with severer handicaps, all the factors supplied by medical rehabilitation can change their outlook from one of little hope to one of new courage and new possibilities.

The largest group afflicted with chronic diseases is composed of elderly patients. Physical and occupational therapy is necessary for many of their disorders, and, by the additional use of all the facets of rehabilitation, these patients can become more contented and assume a more useful role in society. For some unknown reason, inactivity has been thought to be beneficial to elderly patients. This inactivity applies not only to physical but to mental activity as well. Various kinds of therapy can do much to prevent the development of conditions that through inactivity may be more crippling or disabling than the original diseases, and activities may range from passing the hours of the day in practicing a hobby to actual remunerative work. Obviously, many patients cannot and should not be employed. For those who never will be employed, techniques and measures are available that will make their lives and those of their families more comfortable and provide a certain state of physical and social independence; whereas for those less incapacitated, there are types of work that will permit them to use their full capacities.

Because the departments of physical medicine and rehabilitation are chiefly concerned with the care of patients with chronic diseases, occupational therapy has acquired a greater function. In the past, occupational therapy was used almost exclusively in the mental institutions. It now has broadened its scope to supplement the other types of therapy. The occupational therapy section in a general hospital today is likely to have the atmosphere and the equipment of a workshop rather than of a place where only arts and crafts are practiced. The latter techniques are still effective and may be one of the best means of convincing patients that extremities can be put into motion without too much pain. Today, the occupational therapist attempts to develop in the patients self-confidence in their ability to do work. This function may be classed as "psychological therapy"; it is a necessary adjunct in the therapy of many patients and may offer the quickest means of returning these patients to their former occupations.

1. Krusen, F. H.: Wartime Physical Rehabilitation, Proc. Staff Meet., Mayo Clin. 18: 334 (Sept. 22) 1943.

PHILOSOPHY OF REHABILITATION

With the greater interest in persons who are chronically disabled, whether because of disease or trauma, the philosophy of medical rehabilitation has become an integral part in the total care of these patients. Dr. Frank Krusen [1] wrote: "For many years to come, problems of rehabilitation will remain of great importance in our national economy. . . . If medicine is to assume its rightful place of leadership in this rapidly developing project [we must realize] . . . the extreme importance of intelligent medical guidance in the broader socio-economic problems of rehabilitation. . . . We must begin at once to think about the contributions which our own particular medical specialties can make toward solution of this impending vast national problem." Medical rehabilitation today has a definite role in the care of the disabled or handicapped. Its goal is to restore the patient to as near his former life or work as possible within his capabilities or to another way of life that has as great dignity and value. Medical rehabilitation embraces the efforts of many specially trained persons. The head of a program of rehabilitation must be a physician. He should be assisted by physicians of the other specialties, and the ancillary services supplied by physical therapists, occupational therapists, speech therapists, social workers, vocational counselors, psychologists, and other professional persons who can contribute to the total care of the patient.

The enthusiasm for the concept of rehabilitation should include recognition of the powers that are in the patient himself. A word, "motivation," has been used repeatedly and embraces many qualities that either must be present or must be developed in the patient. He must have courage, hope, patience, determination, sufficient common intelligence, and a genuine willingness to work. The physicians in the field of rehabilitation are limited in their efforts to rehabilitate the patient by the patient's own desire of accomplishment. If the wish to work again is not present, or the desire to be as independent as possible is not in the make-up of the patient, the most elaborate physical therapeutic measures or the assistance of the most able counselor will be wasted. Patients are human beings. Many do not wish to improve regardless of the opportunities. Examples are known of patients with mild disabilities who, in spite of all efforts do not improve and are content to depend on their friends, families, or communities for care until their days are ended. Methods, as yet unknown, are needed to motivate these patients. Tests or measures are badly needed that would select the patient who would profit most by the total energies provided by physical medicine and rehabilitation. On the other hand, everyone knows of persons with severe handicaps who, in spite of their disabilities, have

achieved outstanding success in the professions and in other fields. The degree of chronic handicap is not necessarily correlated with the adjustment of the person.

SUMMARY

The specialty of physical medicine and rehabilitation has shown important developments. Its recognition by the medical profession, its extension to and greater influence in the medical schools, its expansion of services in hospitals and in rehabilitation centers, and its stimulation of research and investigations in its methods are all factors that represent progress.

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REHABILITATION OF THE PATIENT WITH MULTIPLE SCLEROSIS

Morton Marks, M.D.
and
Joseph Goodgold, M.D., New York

Multiple sclerosis is one of modern medicine's mystery diseases. Despite intensive investigation its cause and cure remain unknown. Often readily diagnosed, even by the novice in medicine, it is at times one of the most difficult conditions, even for the neurologist, to diagnose accurately. Since the disease is not a reportable one, the exact number of persons afflicted is unknown; however, it has been estimated that there are 250,000 persons with multiple sclerosis in the United States alone. Many of these represent serious nursing problems. The cost of their medical care and the loss of the patient's earning capacity and that of the member of the family charged with the primary responsibility of caring for the patient add up not only to an annual loss of millions of dollars to our economy but to untold suffering.

The clinical course of the disease has been extensively described.[1] A large number of agents and techniques have been employed in the treatment of multiple sclerosis.[2] They have been directed either toward preventing the development of the lesion in the nervous system, i. e., dealing directly with the pathogenesis of the disease, or toward modifying the dysfunctions that result from the nervous system lesions, i. e., symptomatic treatment. The results of treatment have generally been disappointing. "Successful" therapeutic reports must bear careful scrutiny and an awareness of the difficulties in scientifically evaluating the results of any treatment regimen for patients with multiple sclerosis. The problems of ascertaining the correct diagnosis, the unpredictability of the natural course of the illness, the occurrence of prolonged periods of remission, the lack of universal agreement as to suitable criteria of improvement or cure, are only some of the factors complicating the problem. Controlled evaluation is difficult, and caution is necessary in judging the effects of any therapy on the course of multiple sclerosis. Counting the number and frequency of remissions and exacerbations of a group before, during, and after treatment and the use of the patient's past performance as a control for the effects of treatment are not unequivocally reliable. Nathanson [3] has described the variability of the disease in two numerically comparable control groups. Müller [1a] has shown that during the first five years the average number, or frequency, of exacerbations exceeds the number to be expected later in the disease. The 4% "deterioration rate" of MacLean and coworkers [4] is only an approximation; moreover, they believe that a five year appraisal is a minimal period in deducing reliable conclusions in the evaluation of any therapy. Unfortunately, no specific laboratory procedure has as yet been developed that can serve as a pathognomonic aid or one correlated with the relative activity of the process. When this is attained it will be possible to scientifically evaluate therapy.

In view of these difficulties many clinicians have unfortunately interpreted the present status of the treatment of the multiple sclerosis patient as one of therapeutic nihilism. Others, however, have accepted the challenge of medically managing these patients, recognizing well their limitations.[5] The patient and his family have placed an increasing pressure on the physician for "treatment." With the general increased awareness of the potential of rehabilitation techniques in improving the medical status of the chronically ill, many patients with multiple sclerosis have been referred for rehabilitation.[6] This paper is an attempt to critically evaluate the results obtained when all of the facilities of the rehabilitation center are made available to these patients.

From the departments of neurology and physical medicine and rehabilitation, New York University College of Medicine.

Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

This study was supported by a grant from the Rockefeller Foundation.

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REHABILITATION PROGRAM

In the past five years over 200 cases of multiple sclerosis were referred to the department of physical medicine and rehabilitation for evaluation and, if feasible, for the institution of a program. Since most of these patients who were so evaluated were direct referrals, having been culled from a larger multiple sclerosis population, it was obvious that this group was a selected one rather than a cross section, proportionately representative of the disease as it occurs naturally. Recognizing this, the fact that many were seen only for evaluation, and with the limitations of any "control" series, we felt that a statistical evaluation of the clinical features of the illness would be of limited significance, and, therefore, none was carried out in this series. However, careful study of each individual case afforded us the opportunity of assessing the problems underlying the limitations and the type of rehabilitation program recommended for each patient. Since these patients as a group encompassed an extremely broad spectrum in their socioeconomic backgrounds, symptoms, course of illness, and degree of physical disability, certain broad generalizations have become apparent.

We advocate no specific regimen for multiple sclerosis. Each program must rather be a highly individualized one depending on the patient's medical status, needs, and problems. The physician's goals must be based on a realistic appraisal of the patient's medical course. When the disease appears to be relatively stationary or retrogressive there need be no hesitancy in instituting a program; however, if the disease appears to be progressive, a careful appraisal must be made as to whether the immediate goals are realistic to warrant expenditures of the required time, effort, and money. In view of the frequency of exacerbations and remissions, regular and frequent reevaluations of the patient's status and the treatment are essential.

Various medical opinions exist as to the value of an exercise program for the multiple sclerotic patient. Many physicians feel that it is contraindicated, and some even advocate complete bed rest. Others, however, feel that such physical limitation does not positively influence the course of the illness but rather has a harmful effect in that the patient so treated appears to have a higher incidence of secondary complications. These include a poorer nutritional status, associated with a negative nitrogen balance, osteoporosis, atrophy of disuse in the musculature, an increase in the number and severity of urinary problems, including infections and stones, and a greater degree of psychological trauma. There is no evidence that the rehabilitation regimen, with normal use of physical medicine modalities and aids, has any influence on the primary pathological processes causing the symptoms either positively or negatively. Because of this, and our belief that the secondary complications are less frequent, activity programs were always employed in this series with the realization of the patient's limitations.

One of the characteristic features in multiple sclerosis is the patient's ready fatigability, and this must be carefully considered in carrying out the prescribed program. Patients are encouraged to work to this level and beyond, but not to the point of exhaustion. A clear distinction is often impossible, and in most instances we must rely on the patient's judgment. During an acute exacerbation, intensive exercise programs have been deferred, although attempts are made to prevent contracture formations.

The individual rehabilitation program can be prescribed only after detailed knowledge of the patient's disability and the extent of his handicap is ascertained. This necessitates an appraisal of his muscle strength, range of joint motions, and proficiency in the activities of daily living. A careful psychological and social evaluation is imperative. The patient's mental and intellectual status, personality structure, and motivations must be ascertained. His goals must be realistic and must be consistent with those of the physician for successful rehabilitation. Often intensive corrective efforts must be applied to the social and psychological factors rather than to the physical disability, if significant benefit is to be anticipated from the rehabilitation program.

The treatment program is primarily directed toward the acquisition, if possible, of those activities of daily living necessary for proficient function at a specific level in his own environment, i. e., bed, wheelchair, or ambulatory. Whenever possible the specific neuromuscular disability responsible for the deficit in function is corrected by appropriate treatment of the abnormal factors, such as correction or improvement of weak muscles or "coordination exercises." The intelligent use of physical medicine's aids and modalities assumes a significant role in bringing this about. The therapeutic program is directed at functional improvement. An increase in muscle strength is of little value unless it is functionally significant as evidenced by an improvement in the patient's ability to perform his activities of daily living. If therapy is ineffectual or impracticable, attempts must be made to teach the patient to function in as capable a manner as possible with and despite his disability. In certain cases substituted movements can be adequately utilized. Frequently it will be necessary to employ various compensatory prosthetic or self-help devices, including canes, crutches, braces, and wheelchairs. By the intelligent exploitation of the patient's residual capabilities and the use of many of these devices several patients have been made physically independent, and some have been capable of returning to work. Complete self-care is a minimal but significant goal.

EXTENT OF DISABILITIES

The nature and extent of the disabilities encountered in the patient with multiple sclerosis are extremely variable. Occasionally the clinical picture is one of hemiplegia. More commonly spastic paraplegia is encountered. Since the management of these two disabilities has been extensively described they will not be reviewed here. The basic rehabilitative principles used in their treatment, however, are applicable for the patient with multiple sclerosis.

Ataxia is frequently encountered and may reflect involvement of the cerebellar system and its projections or impairment of proprioception. Frenkel's coordination exercises are commonly employed, and vision is more fully utilized as a sensory percept. The cane tip and shoe

tip can be painted white to promote better visualization in dim light. Intensive muscle reeducation and progressive resistance exercises, when there is muscle weakness, are often necessary. Occupational therapy may be an extremely valuable phase of this treatment. The results may be of marked value in the properly selected patient.

Spasticity is often one of the most distressing problems. Medical adjuvants, such as mephenesin, have been relatively ineffective in its control. Stretching to relieve spasticity is unphysiological and of little benefit. Proper bracing, however, frequently helps in its management. In occasional instances obturator neurectomy or block has resulted in significant improvement in spasticity and correction of "scissoring." Anterior rhizotomy and intrathecal alcohol blocks were not employed, although occasionally considered. Once these are used the patient loses all hope of any functional return in the denervated areas even should a spontaneous remission occur.

THERAPEUTIC TREATMENT

For gait retraining a precise evaluation of the gait abnormalities is necessary. This includes an appreciation of motor power, the particular muscle groups involved, the degree of incoordination due to ataxia and spasticity, the sensory status, etc., and whether canes, crutches, or braces are necessary. The decision as to whether the patient should be braced must be carefully considered in view of the additional weight and the patient's proneness to fatigue. The degree of ataxia and/or spasticity may be severe enough to preclude walking. If so, standing at least 20 minutes a day, either in braces or on a tilt board, is still advocated to prevent the secondary metabolic complications of inactivity. In retraining, balancing exercises are important before walking is begun. Relaxation exercises are used, and in reeducation, reinforcement techniques with residual movement patterns, e. g., Strümpell's phenomenon, are used. A broad-based gait is often deliberately cultivated. Wading in a pool between parallel bars may be helpful in the early stages.

Passive exercises are of limited value, except for the prevention and correction of contractures. Only a few repetitions of the joint range of motion appear necessary in the patient's routine management. Progressive resistance exercises have their prime use in strengthening weak muscles and muscles in which there has been a supervening atrophy of disuse; however, in view of the patient's proneness to fatigue these exercises must be carried out judiciously.

The physical medicine modalities used above, have a limited usefulness. Heat, whirlpool, Hubbard tank, and Moistaire cabinets are essentially preheating techniques and useful preliminaries to an exercise program or stretching for the correction of contracture. Electrical stimulation seems to be useful only as an adjuvant in muscle reeducation techniques.

Occupational therapy, in addition to its usefulness in complementing and augmenting muscle reeducation and coordination, psychologically benefits the patient by stimulating interest and motivation. It can also serve for prevocational exploration and prevocational and vocational training. One of the significant facts clearly delineated in this study was the observation that too little emphasis has been placed on the vocational potential of the patient with multiple sclerosis. Many of these patients have long-standing chronic cases, some with but little evidence of progression, and could definitely return to some form of gainful employment. It is to be hoped that this problem can be more fully explored and that support from business organizations, unions, and offices of the Division of Vocational Rehabilitation will be forthcoming.

Bowel and bladder control is important to the patient. Often it means the difference between social acceptance and rejection, with all its psychological and economic implications. Bladder symptoms can often be controlled by medicaments, such as atropine, methantheline (Banthine), caramiphen hydrochloride (Panparnit), and bethanechol chloride (Urecholine). If incontinence persists the patient must be trained in the proper use of aids, including urinals, urinary pads, and waterproof pants. With loss of bowel control, strenuous efforts are made to retrain the patient. Most patients can accomplish this readily. In only an occasional instance has this proved ineffectual and have the garments and sanitary devices developed for the paraplegic been necessary.[7]

SUMMARY AND CONCLUSIONS

The rehabilitation of the patient with multiple sclerosis has distinct limitations in view of the natural tendency of the disease to progress. In selected cases, however, if the patient's and the physician's goals are realistic much can be accomplished in increasing the patient's functional capacities by exploiting the techniques and facilities of a comprehensive rehabilitation program. The therapeutic program must be highly individualized and frequently be reassessed. The psychological aspects of such a program are often of considerable significance. The rehabilitation program appears to have no significant effect on the primary disease process per se; however, it often apparently mobilizes the patient's residual capabilities and potentials both physically and psychologically. In addition, a rehabilitation program appears to be a factor in reducing the extent and severity of secondary complications.

Therapeutic nihilism is unwarranted and may prove a disservice to the patient in that it often relegates his medical management to the inadequately trained quasiprofessional practitioner or cultist. It is the physician's obligation to assume the responsibilities for the care of the patient with multiple sclerosis. Warm, supportive, and symptomatic treatment not only can minimize the residue of the neurological dysfunction but may also be of distinct psychotherapeutic value in assisting the patient to make his best possible adjustment.

400 E. 34th St. (Dr. Marks).

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PRACTICAL MECHANICAL DEVICES FOR USE BY DISABLED PERSONS

Donald A. Covalt, M.D., New York

In every rehabilitation center, patients are seen who have a paralysis or weakness of muscles, loss of coordination, and/or loss of range of motion. The ideal is to bring every patient back to as near normal as possible through the use of the various disciplines available, such as physical therapy, occupational therapy, and all of the different modalities that are used in these departments. We know that in spite of the best of medical treatment and full use of all the disciplines and modalities that are now available to us there will be a certain number of disabled patients who cannot be returned completely to their original status. Mechanical self-help devices must be developed in order to make these patients as self-sufficient as possible.

There has been in the public mind, and in the minds of patients themselves, the feeling that splints, braces, and mechanical devices are not socially acceptable. I know the patients' attitude has changed, particularly when such a device makes it possible for a patient to dress himself, feed himself, or return to work again. I also have the feeling that the public is beginning to accept such mechanical aids.

At the Institute of Physical Medicine and Rehabilitation, a project has been set up for the development, testing, and gathering together of all such devices. This has been sponsored for the past five years by the National Foundation for Infantile Paralysis. Its function has been to devise mechanical aids and also to collect information and disseminate this information by means of booklets. These booklets are illustrated and contain plans on how to build these devices, or tell where the devices can be purchased and the price. More than 25,000 copies have been distributed throughout the world. The manuals are a cooperative project; many of the ideas and illustrations have been sent to us from a wide variety of sources, and many have been developed at the Institute of Physical Medicine and Rehabilitation. To my knowledge, devices made at the institute are being used by patients in Africa, South America, and Europe as well as in practically every state in the union.

KINDS OF MECHANICAL AIDS

Mechanical devices can be developed to assist the patient in self-care activities such as personal hygiene, eating, and dressing. These devices include adapted utensils, such as various handles, some of them very simple, to be adapted to a spoon or fork or knife so that a patient who is unable to flex his fingers completely will be able to feed himself. Sometimes a long handled utensil, for instance a spoon that has a hinge joint on the end with an extension, enables a crippled arthritic patient who is unable to get his hand to his mouth to feed himself. Elastic shoe laces enable the hemiplegic patient to slip on shoes by himself without the necessity of tying a bow knot every time he dresses. A holder for an electric razor has been developed that enables the patient who has loss of grasp of his hand to shave again. Adjustable toilet seats, 2, 4, and 6 in. higher than the usual seat, are of help to arthritic patients.

Transportation devices such as a wheelchair and hand controls for his automobile will enable a paraplegic patient to travel to and from work. Adaptation of the wheelchair enables the patient with weakened upper extremities to transport himself. A simple rubber tubing that fits over the wheelchair hand rims enables the patient with loss of grasp of hands to push his wheelchair. A mechanical lift has been developed that will assist the patient paralyzed in all four extremities in getting from the bed to the wheelchair and back again. Crutches come in many different types, including the Lofstrand, the triceps crutch, the crutch developed at the Warm Springs Georgia Foundation for polio patients, and the adjustable single shaft with adjustable endpiece wooden crutches. These must sometimes be adapted so the patient can use them with the best possible control. In many instances, it is necessary for the physician to sit down with the patient and find out exactly what individual adjustments must be made to all of these devices.

Communication is another important activity in which many patients can be helped. A pencil holder has been developed in which the pencil can be fitted so that a patient with paralysis of the hand can write again. Special devices have been fitted to typewriters and the telephone to assist the patient. Such simple devices as a dowel rod fitted to a pad strapped to the palms of a poliomyelitis patient who has loss of strength of the fingers will enable this patient to use the typewriter again, even though it is just a "hunt and peck" system. The typewriter can be fitted with a continuous single roll, and after the patient has completed his typing the letters can be torn out and mailed by a member of the family. Instead of having to dial a telephone, a patient with a weakened upper extremity can use an ordinary large laboratory stand and clamps that hold the telephone in such a position that he is able to speak into the receiver and to hear. A simple toggle switch is fitted lower on the control box or may be attached to the desk; by moving this to a position where he can reach it with his arm, the patient is able to get the operator and give his number. Special spectacles have been developed with prisms so that a patient who must lie flat in bed can read a book without lifting his head. Special devices are also available for the home, such as stairs with low rise, ramps, elevators, and special furniture. A special chair has been developed for the arthritic patient with a frozen spine and ankylosed hips who is not able to sit but only to stand or to lie in bed; the new chair is fitted to the patient in such a way that it will support his weight while he is in the standing position. We believe it is important also to develop devices for recreation and avocational pursuits.

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FINDING THE PROPER AID

There comes a time when the physician is forced to realize that the patient has gone as far as possible in developing muscle strength, range of motion, and coordination. Then it is time to sit down with the patient and the staff available to him and analyze the physical factors that the patient has left. The patient's home environment and the kind of work to which he is to return must be decided and then the device suggested for those areas wherein the patient needs help. At this time also, temporary prescriptions for mechanical aids are discussed. The practical ones are finally committed to the laboratory technician in order that they may be made. Fittings and adjustments are needed from time to time, and sometimes a complete device is discarded and a new one made, until the proper device is made as light as possible and still strong enough to do the job.

Mechanical devices can help a patient become more self-sufficient by assisting the return of muscle function and range of motion, compensating for muscle weakness and limitation of motion, helping to control coordination, helping to control spasticity, helping to replace body parts, helping to compensate for loss of hearing, sight, or sensation, and aiding a nurse, attendant, or member of the family and thus minimizing the need for personal assistance.

A decision must be made as to whether a device is going to be a temporary affair or one the patient will use the rest of his life. If the device is going to be permanent, proper selection of materials for stress and strain, use, and weight must be considered. Self-help devices should always be made with social acceptability kept in mind. The cosmetic effect of such a device can often be increased by the proper use of materials and flesh-colored paint in order for the device to be as unobtrusive as possible. We have at this time a wide range of materials with which to work in order to make devices that not only get the job done but also are light and as attractive as possible. Light metals such as Duralumin and magnesium are available. The use of glass cloth (Fiberglas) impregnated with resin has helped us in many of our splinting problems. Plastics of many kinds are available and can be utilized to fit any situation. A wealth of material is available for such self-help devices.

COMMENT

At the Institute of Physical Medicine and Rehabilitation we have found that the use of an active imagination plus the mechanical skill and ingenuity of our two technicians and the practical common sense of the head of the department, who is an occupational therapist, have all combined to make this a valuable service to our physicians. I have sat in at some of the conferences with the staff of this department and a patient, a young man with a completely flail right upper extremity. We were seeking to develop a device that would enable the patient, a salesman, to write his orders. Using the idea of the Handy Hand, we finally duplicated the device made by Robin Aids, with a plastic hinged outer covering for the patient's arm, hand, and fingers, operated by the opposite shoulder. The man could flex and extend the fingers of this hand enough to write and also to use it as an assisting hand. I know of no greater satisfaction than to be able to help in the development of a mechanical device that enables the patient to become self-sufficient and to return to work.

400 E. 34th St. (16).

POSTOPERATIVE AEROSOL THERAPY

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and
Arthur T. Shima, M.D., Chicago

Aerosol or nebulization therapy has recently been introduced in the care of the patient who has undergone surgery. This phase of medical care is in a state of flux and confusion in many segments of the medical profession. It is the purpose of this paper to give our views on the place of aerosol or nebulization therapy in the care of patients after operation. There are many ramifications to proper postoperative care. The chief concern of this paper, however, is to discuss the role of the aerosols. We do not mean to imply that aerosol therapy is of prime importance, yet we feel that this form of medication has much to offer many patients after operation. In numerous instances, morbidity and mortality may be decreased significantly by the judicious use of this adjuvant to the over-all therapy of the patient.

DEFINITION OF TERMS

It may be well to define our concept and understanding of the terms and techniques related to this form of therapy. Pertinent terms are humidity, bubbling devices, steam humidification, supersaturation or "cold steam," atomization, and aerosolization or nebulization.

Humidity.—Humidity is a term used to express many things dealing with wetness or dampness. There are two scientific terms that should be defined and clearly understood. Absolute humidity is a term used in the physical sciences; it is defined as the actual amount of water vapor, expressed as the weight of vapor present, in a given volume of gas at a specific temperature. There are so many grams of water per cubic meter or so many ounces per cubic foot, relating weight to volume at a specific temperature. Relative humidity is a term used in the clinical sciences, and by common usage it is shortened to "humidity." It indicates the amount of water vapor present in a volume of gas as a percentage of the maximum possible amount at the same temperature. A rela-

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tive humidity of 40% at a specific temperature means that there is 40% of the water vapor present that could be contained in a saturated atmosphere. High humidity is a confusing term, often used loosely. In many American homes a humidity of 45% may be termed high. In a "high humidity" room relative humidities of 70 to 90% may be considered high. From 40 to 80% in an oxygen tent may be considered "high humidity"; therefore, the meaning of this term is not concise. It merely implies that there is more humidity in the atmosphere than is usually present under those conditions in a specific locality.

It is even more confusing when one realizes the role that temperature plays in the meaning of relative humidity; for example, in a room with a cool temperature there may be an atmosphere that is interpreted as having a humidity of 100%. Yet, if a person inhales this 100% atmosphere, by the time the air is warmed on its passage to the lungs the air that reaches the alveoli has only a 70% humidity, due to the higher body temperature. If the humidity, as in most instances, is about 40%, the shift in humidity is even more pronounced. As the air is raised to body temperature the relative humidity may fall as low as 15 to 20%. It is a known physiological fact that the alveolar air has a humidity of 100% and a temperature of 37 C or 98 F. It is obvious, then, that the inspired air must absorb sufficient moisture to bring its humidity up to 100%, and this is done at the expense of the hydration of the respiratory passages. The amount of absorption is dependent upon the relative humidity of the inspired air. It becomes clear that, insofar as the body economy is concerned, even the so-called high humidities are inadequate, because they still abstract water from the respiratory passages. The concept of adequate humidity, for our purposes, always implies a supersaturation with actual suspension of water particles, so that water may tend to be added rather than extracted from the respiratory passages.

Bubbling Devices.—Bubbling devices have been in use for many years, and, unfortunately, are still in use in many localities. It is true that the smaller the gas bubble, and the longer the distance it travels through a water chamber, the higher will be the resultant humidity; however, as a result of the cooling and short passage through the water, the gas will volatilize such small quantities of water that these instruments are relatively ineffective from the physiological standpoint. At best this apparatus creates humidity that is not adequate to add water to the respiratory passages but almost always dehydrates them. A humidity of about 60 to 70% may be obtained by bubbling devices; however, this is inadequate to prevent dehydration because of the warming of the air en route to the alveoli. Occasionally the bubbling devices may be used for specific therapy, such as for the transport of an alcohol vapor in the treatment of pulmonary edema. Nevertheless, the actual amount of alcohol transported by this technique is relatively small.

Steam Humidification.—The value of steam in the care of laryngotracheobronchitis, bronchial irritations, tracheitis, and similar conditions has been dramatically presented to both the public and the medical profession for many years. It would be foolhardy to state that these techniques are either worthless or ineffectual; nevertheless, a reexamination of this technique might bring forth several points. This technique has always been uncomfortable because it increases the temperature of the room and of the person to whom it is being administered. This increased temperature causes an increased metabolic demand on the body and, in many instances, negates some of the efficiency of the therapy. The technique is cumbersome, difficult to manage, and unpleasant. With proper steam generating equipment it is quite possible that water is not abstracted from the body tissues, but the equipment is frequently a burn hazard. The steam generating apparatus does not really provide an effective overall supersaturated atmosphere, because, as the distance from the source of steam increases, the temperature decreases and the moisture diffuses into the room air. The atmosphere inhaled by the patient is only about 70 to 100% saturated, which is dehydrating to the respiratory system. The patient cannot be placed too near the steam apparatus for fear of producing burns or unpleasant heat. It becomes obvious that the effectiveness of steam humidification is again only relative. In those instances in which the patient actually inhales the steam the humidity is high, but the process is inadequate from a physiological standpoint.

"Cold Steam."—Advancements have given all of the advantages of hot steam in what is now popularly known as "cold steam" or supersaturation. Cold steam can be produced by various types of mechanical devices. It is important to emphasize that this vapor is cold, it has a high content of water particles, and the uniformity of the particle size can be more adequately controlled. Drugs and techniques that are impossible with the hot steam method can be utilized. These are supersaturation techniques. Many persons have been concerned lest fluids of large quantity remain unabsorbed in the lung and become injurious. Moritz [1] has shown that even a 16 lb. (7.3 kg.) dog can adequately absorb, over a two hour period, 750 cc. of water instilled in the lung. Other work along this line by Gordon [2] and associates at the University of Illinois has shown, during experiments on drowning, that quantities of fluids far in excess of that nebulizable by any available equipment can be absorbed with ease. The patient with bulbar poliomyelitis is an example of the "poor risk" patient who can be exposed to aerosol therapy for long periods with no sign of respiratory distress due to the addition of quantities of moisture to his atmosphere. Thus, fear of damage to the respiratory system is not a contraindication to the administration of aerosol therapy.

Atomization.—Atomization is the process wherein a gas or air in rapid transit blows across an orifice, breaking a liquid into small particles. The process of atomization, however, has a disadvantage in that the variation in size between the smallest and largest particles is considerable, and the particles themselves are of a size larger than those obtained by nebulization.

Nebulization.—Aerosolization and nebulization are herein considered to be synonymous. Nebulization, like atomization, is the process wherein a gas or air in rapid

1. Moritz, A. R.: Chemical Methods for Determination of Death by Drowning, Physiol. Rev. **24**: 70, 1944.

2. Gordon, A. S., and Raymond, F.: Factors Contributing to Ventricular Fibrillation in a Drowning Dog, to be published.

transit blows across an orifice, breaking a liquid into small particles, and then, unlike atomization, this liquid-gas droplet mixture is blown against a baffle plate that breaks the particles into smaller sizes and at the same time causes the larger particles to fall back and be removed from the over-all passage of the aerosol. Thus, nebulization or aerosolization is a technique far superior to atomization, because it gives a smaller and more uniform particle with less variation in size. The size of the particles is of prime importance in determining upon which portion of the respiratory tree they will primarily exert their effect. It has been stated [3] that if a particle size is larger than 30 μ it will be baffled out in the trachea. The terminal bronchioles baffle out particle sizes from 10 to 30 μ, the alveolar ducts baffle out particle sizes from 3 to 10 μ, and the air sacs baffle out particle sizes from 0.5 to 3 μ. If a particle size is smaller than 0.5 μ it may be exhaled with the next breath because of its extreme lightness. Almost all nebulizing apparatus on the market give a relatively adequate particle size, and the drugs or liquids probably will be carried to all portions of the respiratory tract. It is hoped that nebulizers that are being developed will produce a particle size range in which the mean is 3 μ.

It is beyond the scope of this paper to deal specifically with the technical aspects of the available nebulizers. It is not possible as yet to obtain all the necessary apparatus (generators, tubing, and masks) in a compact unit; however, with a little ingenuity one can improvise the available equipment to clinically meet the physiological demands of the patient. The equipment now available, although satisfactory, is undergoing modification to meet the specific problems at hand. Many satisfactory pieces of equipment have failed to function adequately because there has been lack of proper care and supervision. Probably the most important aspect has been the failure to follow directions for adequate cleansing of the equipment after each use. As a result, the fine jets become clogged and nebulization is inefficient. The use of drugs that are not completely dissolved is an added difficulty to the proper functioning of equipment because of the increased ease in blocking the capillary tubes. The instrument for nebulization must be checked at frequent intervals to see that there has been no obstruction to the jet. Special dissolving solutions and equipment should be available to properly maintain the apparatus.

There are two types of aerosol therapy. In the first type, oxygen is the principal physiological agent. Alevaire and/or other agents are of secondary importance in that they largely serve to increase the efficiency of the oxygen therapy. In the second technique, oxygen or air is used as the vehicle and/or motive force for nebulizing therapeutic agents. Air may be used when oxygen is physiologically contraindicated or a potential hazard. Oxygen, as contained in steel cylinders, is a completely anhydrous gas and consequently a potent dehydrating agent; therefore, its use under most clinical conditions requires adequate humidity. Objection to oxygen as a vehicle is based on the fact that oxygen has a physiological effect that may be detrimental to the poor risk patient, because sudden shifts of oxygen concentration may call upon physiological alterations that can throw a strain on the body mechanisms. In those instances in which aerosolized fluids are the primary therapeutic agents oxygen as a vehicle can be adequately replaced by air. This air may be provided by an air compressor; however, the air compressor should not be the variety in which the air is compressed through the mechanism, where it may become contaminated by extraneous materials such as oil. The pumps should be of a variety that can be used continuously for 24 hours or more without the hazard of breakdown or mechanical failure, and they should be able to maintain a minimum of 10 lb. per square inch effective pressure. Ingenuity and adaptation of standard pieces of equipment can adequately meet the needs of almost all patients requiring aerosol therapy.

PHYSIOLOGICAL CONSIDERATIONS

There are many factors that predispose toward postoperative chest complications. Probably one of the important factors is the preoperative condition of the patient, especially the state of his respiratory system. Another factor of importance is the site of operation. Statistics show that abdominal operations have a greater incidence of chest complications than operations upon the extremities. Operations on the upper abdomen have a greater morbidity than those on the lower abdomen, with the exception of an appendectomy requiring drainage of an appendical abscess. Many of these factors are beyond the control of the surgical team; however, there are factors that are controllable.

The defense mechanisms of the respiratory system are: the warming, wetting, and filtering action of the upper respiratory tract, the sneeze reflex, ciliary activity, peristaltic movement of the bronchioles, and the cough reflex. The undulating and wave-like motion of the cilia aids in the propulsion of liquid secretions and extraneous materials toward the portion of the tracheobronchial tree where the cough reflex can be initiated and further propel these substances toward the pharynx, where they may be adequately eliminated. The cilia are present along the tracheobronchial tree down to the respiratory bronchioles. Elastic fibers, which course longitudinally in the tunica propria of the mucosa, extend down to the alveoli. These elastic fibers are responsible for the recoil of the bronchioles with each expiration. This peristaltic movement aids in propelling secretions along the respiratory bronchioles and ducts to the portion where the cilia can exert their influence. The peristaltic movement also aids ciliary activity; therefore, any drug, anesthetic agent, or condition that depresses any or all of these mechanisms contributes to postoperative chest complications.

The consistency of the secretions is also a factor to be considered; the more fluid the secretions, the easier is the task of the defense mechanisms in eliminating them. Conversely, as the secretions become more viscid it becomes more difficult for ciliary activity and bronchiolar peristaltic movement to propel them up the respiratory tract and a greater cough effort is necessary to expel them. Anything that tends to dry the secretions or render them more viscid—dehydration, use of anhydrous gases, excessive use of the belladonna drugs —renders the defense mechanisms less effective and sets the stage for atelectasis.

3. Somatic and Psychiatric Treatment of Asthma, Abramson, H. A., editor, Baltimore, Williams & Wilkins Company, 1951.

Conditions that contribute to postoperative chest complications are: agents that tend to dry the secretions or render them more viscid; respiratory depressants; debilitating conditions that lower the resistance of the patient; mechanisms or conditions limiting the function of the diaphragm; excessive use of narcotics that depress the cough reflex and ciliary activity; respiratory obstruction; any condition that produces leakage into the alveoli, such as hypoxia or hypoxemia; many conditions that produce engorgement of the lung tissue, such as cardiac failure; or any condition that produces a transudate or exudate into the alveoli, such as bacteremia. The choice of anesthetic agent and/or technique used in any particular instance is a minor factor in contributing to postoperative chest complications. The other major contributing group of causative conditions are the cardiovascular pathological states, such as cerebrovascular accidents, pulmonary embolic phenomena, thromboses, and infarcts. These states are not easily preventable, but with proper aerosol inhalation therapy the resultant morbidity and mortality may be markedly diminished.

Atelectasis and pneumonitis are among the two commonest complications that occur in patients after an operation. Atelectasis may be defined as that condition wherein alveoli are collapsed, either as a result of some external force or as a result of a relative blockage of the tracheobronchial tree with the absorption of the gases behind the so-called plug. Postoperative pneumonitis, which used to occur frequently, now is infrequent as a result of better postoperative management and the use of antibiotics. In fact, a postoperative pneumonia is most frequently the result of a neglected atelectasis. Indeed, we have found a pneumonitis secondary to an operative procedure so rare as to be noteworthy; therefore, management of atelectasis is a major problem. The cleansing of the tracheobronchial tree and the proper maintenance of the physiological resistance of the person and his respiratory tree are major factors in protection against atelectasis. It is beyond the scope of this paper to discuss the factors involved in the production of atelectasis and pneumonia. We can merely mention some of the factors concerned and discuss them as they pertain to inhalation therapy. Some of these factors are tight dressings and binders that restrict respiration, pain that limits respiration, the patient's position on the operating table or in bed postoperatively that limits respiration, debilitating infection, and the presence of a chronic bronchitis.

There may exist an already altered respiratory tree in users of coal-oil stoves, miners, steel workers, and chronic smokers, all of whom are constantly irritated by noxious fumes or irritant vapors, as well as in persons who have chronic sinusitis or chronic bronchitis. These persons produce increased quantities of secretions and have varying degrees of inflammation and infective processes. If they are not debilitated they are able to handle this pathological process by their cough reflex, ciliary activity, and over-all resistance; however, when they have been operated on their ciliary activity is depressed, their secretions are thickened, or their resistance is lowered, and they become an increased risk from the standpoint of postoperative chest complications. Therefore, it becomes obvious that probably the wisest course to follow after operation in the patient with any of these predisposing factors is to take adequate prophylactic as well as therapeutic measures. Aerosol therapy, properly used, offers both of these potential benefits.

POSTOPERATIVE AEROSOL INHALATION THERAPY

Nebulization therapy may be discussed in regard to the therapeutic effects that it can produce. These effects are vasoconstriction of the respiratory mucosa, bronchodilatation, antihistaminic effects, antibiotic effects, administration of digestive enzymes, and detergent or wetting action. Inhalation therapy should be used in a manner similar to drug therapy of any type. Routines should be condemned; specific drugs and agents should be used with definite purposes and objectives in mind. In many instances the inhalation of an agent by the lungs creates a higher concentration or a greater effect locally than can be obtained by the use of a similar drug by intravenous, intramuscular, or oral route. As purulent or mucopurulent secretions adhere to the mucosa and the micro-organisms multiply on the surface, systemic antibiotics may be ineffectual in eliminating these bacteria; therefore, the greatest effects may accrue in many instances from both the systemic and the local application or utilization of drugs.

Vasoconstrictor drugs such as phenylephrine (Neo-Synephrine) hydrochloride may be used for their temporary vasoconstrictive action upon respiratory mucosa, making a more adequate passage for respiratory exchange and for medicaments. These are to be used only for those specific conditions when engorgement renders inhalation therapy ineffective. Bronchodilators have their greatest advantage in those instances in which bronchoconstriction is a complicating factor. Drugs such as isopropylarterenol (Isuprel) hydrochloride or epinephrine may be used in those persons who have a specific disease, such as asthma, or in those instances in which bronchoconstriction is an element of the pathological state. Occasionally the systemic use of the bronchodilators as well as local application is of marked benefit. Antihistaminics may be placed in the aerosol prescription in order to obtain an antihistaminic effect in the pulmonary tree. In many instances it may be wise to combine the antihistaminic with a bronchodilator or a vasoconstrictor drug or with any or all of the other techniques; however, the antihistaminic, bronchodilator, and vasoconstrictor drugs are of lesser importance in inhalation therapy as applied to the patient after operation.

Antibiotics may be added to the tracheobronchial tree in two forms. They may be inhaled intermittently in relatively high concentrations for a specific infection, or they may be used continuously in a more dilute solution in combination with other agents and techniques. These drugs should not be used empirically, but an effort should be made to culture, identify, and test for the sensitivity of the organism present. The antibiotics indicated for the specific organism should then be used with the technique that is most advantageous for the particular patient. Tests for the identification of the organism and its sensitivity should be repeated in those instances in which this method of therapy is used over a long period of time, since the bacterial flora and the sensitivity may change

with the passage of time and the use of the antibiotics. Digestive enzymes such as crystalline trypsin (Tryptar) are added by some to certain inhalation prescriptions. We prefer not to use it because of its irritating and anaphylactoid potentialities.

Wetting agents such as Alevaire, a balanced detergent formula specifically designed for aerosol therapy, may be used. Alevaire consists of a mixture of 0.125% Superinone (oxyethylated tertiary octylphenol-formaldehyde polymer), 5% glycerin, 2% sodium bicarbonate, and water. When properly nebulized it meets the requirements for supersaturation or aerosol therapy. These particles, because of the intense supersaturation of the gas and the stabilizing effect of the small amount of glycerin, do not tend to evaporate before they reach the alveolar portion of the lung. This factor is of equal importance when the material is used as a vehicle for any of the agents mentioned above or when used alone for the assurance of a supersaturated humidity. Through its surface action wetting characteristics and its thinning action Alevaire aids in the control and elimination of secretions. With supersaturation the secretions are maintained liquid and the cilia can function more efficiently with greater ease of movement of the less viscid secretions; therefore, secretions may be brought to the area where they can stimulate the cough reflex and be eliminated. The cough reflex is more effective on these thinned and watery secretions and the pain and trauma of the paroxysmal bouts of coughing is reduced. Alevaire, alone or in combination with other specific drugs, offers another definite aid in successfully combating the major hazards of postoperative chest complications. Patients after operation are subject to respiratory complications and are candidates for the prophylactic or therapeutic use of Alevaire with proper nebulization except, perhaps, patients with pulmonary edema or those requiring a restricted sodium intake. Alevaire has been demonstrated to be a safe and stable drug for aerosol treatment of both adults and children. We have used this solution with increasing frequency for two years without clinical appearance of irritation to the mucosa of the respiratory tract. We feel that it is a valuable agent and a vital adjunct in the production of true high humidity therapy, as well as offering a safe and effective agent in mobilizing secretions.

Alevaire may be administered from any nebulizer capable of delivering the previously recommended particle sizes, and functioning efficiently at gas flows from 4 to 10 liters per minute. A compensated regulator should be used in regulating the actual amount of gas delivered, as the nebulizer sets up a back pressure that may produce a false reading on the customary pressure gauge. The nebulizer should be easily cleaned and have a supply chamber with a minimum capacity of 250 cc., or should be readily adaptable to continuous supply. The amounts of Alevaire used are regulated by the severity of the patient's condition and the capacity of the nebulizer. It may be desirable to administer the aerosol continuously in severe cases. In rare instances as much as 1,500 cc. daily may be used; intermittent therapy may be adequate in less serious cases. The aerosol should be given for at least one hour at each treatment, preferably at least three times a day and more frequently if necessary. The length of aerosol treatment and the intervals between treatments should be regulated by the patient's response to treatment and should continue as long as the need for their particular benefits exists.

SPECIAL INDICATIONS

The patient who has undergone tracheotomy loses the warming and humidifying mechanisms of his upper respiratory tree, causing irritation of the mucosa and drying of the secretions of his lower respiratory tree. In addition, because he is unable to close his glottis effectively, he loses the power of building up pressure and its sudden release, which constitutes the cough; therefore, he struggles or strains with a blowing action through his tracheostomy in an attempt to eliminate his secretions. The patient who has been subjected to tracheotomy should always be considered to have irritation of his bronchial tree with mucopurulent viscid secretions, and, therefore, he becomes a candidate for chest complications. Aerosol therapy should be utilized prophylactically to prevent irritation and therapeutically as an aid in the control and elimination of secretions the neglect of which are so apt to lead to chest complications. Children with respiratory complications have been treated by humidification, even of a relatively poor variety, with so marked a benefit that it is part of the folklore treatment of children of many races and peoples. Irritation of the tracheobronchial tree from any cause is productive of secretions that, even though minute in total volume, are of dramatic consequence in the respiration of the infant or child. The thinning of the secretions or the rendering of the cough reflex more productive is of far greater relative importance to the child than to the adult. Exhaustion and actual asphyxia have resulted from simple tracheobronchitic infections that will respond with dramatic suddenness to adequate aerosol therapy.

SUMMARY

After operation all patients are potential candidates for chest complications. There are, however, numerous predisposing factors that may increase the likelihood of this complication. Adequate use of specific aerosol therapy will assist the surgical team in the management of the patient after operation and in the prevention of chest complications.

1819 W. Polk St. (12) (Dr. Sadove).

Hazards of Blood Transfusion.—The increase in the use of blood has been a mixed blessing. . . . The more frequent use of blood has saved many lives where formerly people died because blood was not available. However, the use of blood has been abused in many instances, and blood given in situations where it is not indicated. This nonchalant use of blood should be viewed with great concern since blood transfusions have a higher mortality rate than appendectomy or ether anesthesia. Indeed, the mortality from blood transfusions has been estimated at one death in every 1,000 to 3,000 transfusions. . . . Seven types of transfusion reactions can occur. They are: (a) febrile reactions, (b) anaphylactic reactions, (c) air embolism, (d) transmission of disease, (e) bacterial contamination, (f) circulatory overloading, and (g) hemolytic reactions caused by incompatible blood.—E. H. Sanneman Jr., M.D., Hazards of Blood Transfusions, with Illustrative Fatal Cases, *Journal of Kentucky State Medical Association,* August, 1954.

UREMIC PERICARDITIS IN ACUTE AND CHRONIC RENAL FAILURE

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and
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The occurrence of a fibrinous pericarditis as a terminal event in chronic renal failure has been known for many years. That this pericarditis can be painful is an accepted fact.[1] The purpose of this paper is to report the occurrence of pericarditis in patients with acute renal failure and to compare this with its occurrence in chronic renal failure. A second purpose is to describe the type of pain that occurs as a result of uremic pericarditis. All patients studied were seen by one or both of the authors.

ACUTE RENAL FAILURE

The hospital records of 77 patients with acute renal failure of varying cause were reviewed; 40 of these patients, or 52%, died. Of the 63 patients who did not have pericarditis, 32, or 50%, died. A pericardial friction rub was heard in 14 of the 77 patients, or 18%. Of these 14 patients, 6 survived and 8, or 57%, died; postmortem examinations were done in 6 of the 8 who died. All of these autopsies revealed morphological evidence of pericarditis. None of the patients had suppurative pericarditis at necropsy, and all of the exudates were sterile on culture.

A concomitant bacterial pneumonitis or a pneumonitis with pleural effusion was present in 10 of the 14 patients. The blood urea nitrogen at the time the friction rub appeared ranged from 77 to 285 mg. per 100 cc., with an average of 124 mg. per 100 cc. The duration of renal failure prior to the appearance of a pericardial friction rub averaged 7 days with a range of 4 to 11 days. Pain in the precordial region or left shoulder was either absent or not mentioned in 13 of the 14 cases. One patient had a steady substernal pain not affected by respiration. At postmortem examination this patient was found to have an acute fibrinous pericarditis and multiple small pulmonary emboli.

CHRONIC RENAL FAILURE

Forty-three patients dying of chronic renal failure of varying origins (chronic glomerulonephritis, chronic pyelonephritis, polycystic disease, and arteriolonephrosclerosis) were studied. Twenty-two, or 51%, of these had pericarditis diagnosed both clinically and at necropsy; eight complained of pain. Seven of these patients with uremia due to either chronic glomerulonephritis or chronic pyelonephritis, who complained of pain and had pericardial friction rubs, were questioned closely by us concerning the location and character of their pain. All of these patients complained of substernal pain. The pain was severe and crushing in three of the seven. In four of the patients it radiated to the left shoulder. In all but one of the patients it was pleuritic in type. The pain was present in all phases of respiration, but it was increased by deep breathing or coughing. One patient noted that the pain was synchronous with the heart beat when he was lying on his right side. The pain was partially relieved in all of these patients when they sat up and leaned forward.

COMMENT

Pericarditis occurring in advanced uremia due to chronic renal disease is a well-known entity.[2] In the autopsies on patients with chronic glomerulonephritis reported by Richter and O'Hare it was found to occur in about half of the cases. This is almost identical to the incidence in our own series. That a similar type of pericarditis occurs in a significant percentage of patients with acute renal failure, however, has not been reported previously. The etiology of uremic pericarditis is obscure; cultures of the exudates are sterile. Its presence does not correlate with the level of the elevated blood urea nitrogen. Fibrinous pericarditis also occurs in patients with terminal cancer; in this instance, too, its cause is obscure.[3]

The appearance of a friction rub in chronic renal disease heralds the approach of death usually within one to two weeks after its onset. In our series of patients with chronic renal failure the average duration of life was 10 days after the appearance of a friction rub. There are, however, occasional patients who have lived for longer periods after the appearance of a friction rub. We have seen two such patients who had definite pericardial friction rubs which disappeared, in one case for 8 weeks and the other for 12 weeks. The rubs then reappeared shortly before death. Both of these patients, however, undoubtedly owed the prolongation of their existence to one or more dialyses with the artificial kidney. A pericardial friction rub, however, does not have the same grave prognostic significance in acute renal failure. The mortality of patients with acute renal failure and a pericardial friction rub (57%) was not significantly different from the mortality of all the patients with acute renal failure (52%).

Pain appears to occur less frequently in patients with acute renal failure and pericarditis than in patients with chronic renal failure and pericarditis. However, one must bear in mind that many of these patients were either comatose or in semicoma during the time that the friction rub was audible and, therefore, might not be expected to complain of pain. Although other authors have stressed the occurrence of pain in infectious rather than uremic pericarditis, pain of one type or another occurred in about half of the cases reported by Richter and O'Hare.[1] In our series of chronic renal failure it occurred in 36% of the cases.

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The nature of the pain in uremic pericarditis is quite variable. It is therefore pertinent to review some of the experimental studies designed to demonstrate the structures and pathways involved in the production of pain of pericardial origin. In 1927 Capps [4] reported a study in which he had introduced a silver trochar into the pericardial cavity of patients with large pericardial effusions in order to define which portions of the pericardium were sensitive to pain. He found that most of the pericardium was devoid of pain receptors. However, when the external layer of the inferior portion of the parietal pericardium was stimulated, a pain was elicited which was referred to the neck and left shoulder. This pain was similar to the pain produced when the central area of the diaphragmatic pleura was stimulated. It was therefore assumed that this area of the pericardium was supplied by branches of the phrenic nerve. Since the remainder of the pericardium was devoid of pain receptors, it was postulated that the other types of pain associated with pericarditis are due to involvement of the contiguous parietal pleura.

In 1929 [5] Alexander, Macleod, and Barker studied the sensory response of the pericardium under direct vision in a patient with acute streptococcic pericarditis who underwent pericardotomy for the purpose of drainage. Their findings differed from those of Capps. It was found that severe substernal pain resulted when pressure was applied against the anterior thoracic wall from inside the pericardial sac and that a sense of pressure was obtained when pressure was applied laterally or posterolaterally. Pinching or pricking the parietal pericardium gave rise to severe sharp substernal pain. They also found, as had Capps, that the visceral pericardium was insensitive to pain. They did not elicit pain in the shoulder or neck when the lower portion of the external layer of pericardium was stimulated.

It is not believed that any complete conclusions can be drawn from these experimental observations on the basis of what is seen clinically in patients. However, it would seem that some of the observations of Capps are in keeping with the clinical findings; namely, that pain referred to the shoulder does occur and that pleuritis is associated with the pericarditis in a significant number of cases in which pain is present. There is no hint from these experimental studies which explains the origin of the steady substernal pain and pressure which at times is so severe as to be mistaken for an acute myocardial infarction. The pain which occurs in uremic pericarditis is not unlike that which occurs in acute idiopathic pericarditis.[6] In the former, however, evidence for an infectious cause is lacking although bacterial pneumonitis with pleural effusion is a frequent concomitant.

SUMMARY AND CONCLUSIONS

Our study showed that pericarditis occurs in about 18% of cases of acute renal failure; that the appearance of a pericardial friction rub in acute renal failure does not have the same grave prognostic significance as it does in chronic renal failure; and that pericarditis occurs in about half of the patients dying of chronic renal failure. In keeping with the findings of earlier experimental studies to elicit the pathways and structures involved in the production of pericardial pain, our clinical observations suggested that precordial pain of a pleuritic type occurs in many patients with uremic pericarditis and pain referred to the left shoulder occurs in about half of the patients who have painful pericarditis.

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CHANCES FOR SURVIVAL IN ACUTE MYOCARDIAL INFARCTION

SURVEY OF THE ACUTE PHASE IN 1,318 PATIENTS

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Physicians and patients of the present generation are well aware that heart disease is the most common cause of death in the United States. The mortality rate of patients with coronary artery thrombosis is generally quoted as ranging from 35 to 65%, with an average of 50%.[1] For many years victims of coronary disease have been instilled with a fear of sudden death or a dread of permanent invalidism; the ensuing psychological effects have seriously limited physicians in providing the proper care and rehabilitation. Current medical teaching, as well as contemporary texts on cardiovascular disease, invariably emphasizes that the outcome of an attack of acute myocardial infarction is unpredictable because of the constant threat of sudden, unexpected death even for persons convalescing favorably. This prevailing view has been responsible for a gloomy outlook on the part of the attending physician even in cases presenting a benign clinical picture. Too often the pronouncement of a poor prognosis represents an attempt on the part of the physician to protect himself if the patient suddenly dies or to attribute some virtue to his therapy if the patient does well while suffering from such a serious disease.[2] Cardiologists or

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This study was a joint project with the National Heart Institute, U. S. Public Health Service, Washington, D. C., in conjunction with the Medical Services of Kings County and Maimonides Hospitals, State University College of Medicine at Brooklyn.

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practitioners frequently justify their conservatism in prognostication by citing one or two cases in their experience in which sudden death resulted despite a benign clinical picture. At present, however, there is a lack of statistical data that would indicate whether "sudden unexpected death" is a common or infrequent event among patients sustaining clinically mild attacks. If a physician seeks for guidance in the textbooks he finds merely general views that he cannot apply to the individual case.[3] In his book, "Heart Disease," Paul D. White [4] made the following statement: "When myocardial infarction sufficiently serious to be clinically recognized occurs, the prognosis is always grave. . . ." More recently, however, Dr. White [5] has decried such prognostic generalizations with these comments: "In cases of cardiovascular disease, the statement of prognosis often ends with the word 'guarded' largely to play safe. Granted that we cannot foretell the future with any certainty, I feel sure nevertheless that we can do better than we have in the past, or are doing now, by approaching the subject more scientifically and seriously. We have more facts and knowledge on which to base our prognoses than we utilize; we should call more than we do on the laws of chance in both our written opinions . . . and our discussion of the prognosis of any individual case with the patient himself, with his family, or with fellow physicians."

FACTORS IN PROGNOSIS

Many of the factors that influence the prognosis adversely in acute myocardial infarction are well known. Careful investigations testify to the seriousness of any one of many signs associated with the acute attack: (1) old age, (2) a history of previous attacks of myocardial infarction, (3) intractable pain accompanying the acute episode, (4) severe or persistent shock, (5) congestive heart failure, (6) high fever and leukocytosis, (7) cardiac arrhythmias such as auricular fibrillation or flutter, ventricular tachycardia or intraventricular block, and (8) the occurrence of embolization. Statistically the presence of any one of these factors increases the mortality rate from the average of 40 or 50% to the range of 60 to 80% or higher.

While such information is of value in estimating prognosis in the more severe attacks of the disease, by what means shall one judge the chances for survival in patients sustaining clinically mild attacks? Smith [6] has reported that at the Henry Ford Hospital mortality from first infarctions has been 21.7%. In an earlier report, however, Master [1] recorded the mortality rate in a series of first attacks treated at home as 5.5%. Baer and associates [7] reported the death rate to be 8.5% in a similar series of 212 cases. Friedberg,[8] in his textbook, "Diseases of the Heart," has estimated that "as milder cases are identified, the mortality rate from first attacks will not greatly exceed 10%." Inasmuch as all first attacks of acute myocardial infarction are not of uniform severity, the death rate among those presenting a benign symptomatology should be considerably below these recorded figures. Since, as will be shown, cases falling into this category comprise almost half of all cases of acute myocardial infarction, the importance of ascertaining mortality and morbidity rates for this group appears obvious. Certainly the average mortality rate of 40 to 50%, or the mortality rate for first attacks, 5.5 to 21.7%, would not appear applicable to this selected low risk group. In order to determine the chances for survival and the risk of "sudden unexpected death" in such cases we have studied the clinical course and outcome of attacks in a large number of patients during their period of hospitalization.

COMPOSITION OF SAMPLE

An analysis of 1,318 consecutive admissions for acute myocardial infarction to three New York hospitals was made. In every instance the clinical diagnosis of acute infarction was documented by one or more electrocardiograms. The age range for the entire series was 30 to 88 years, with a mean age of 56.7 years. All the patients in this study were treated by conservative means without the use of anticoagulants. Of the total, more than 60% were admitted within 24 hours of the onset of their attack and more than 80% within 48 hours. The 611 patients who qualified as "good risks" presented none of the following poor prognostic criteria on the day of admission to the hospital: (1) previous myocardial infarction, (2) intractable pain, (3) extreme degree or persistence of shock, (4) significant enlargement of the heart, (5) gallop rhythm, (6) congestive heart failure, (7) auricular fibrillation or flutter, ventricular tachycardia, or intraventricular block, and (8) diabetic acidosis, marked obesity, previous pulmonary embolism, varicosities in the lower extremities, thrombophlebitis (past or present), or other states predisposing to thrombosis.

TABLE 1.—*Mortality Rate and Incidence of Thromboembolic Complications*

	No. of Cases	Mortality		Thrombo-embolism	
		No.	%	No.	%
Total	1,318	445	33.8	89	6.8
"Good risk"	611	21	3.4	8	1.3
"Poor risk"	707	424	60.0	81	11.5

RESULTS

"Good Risk" Patients.—Of the total group of 1,318 patients, it was found that 611, or 46.4%, qualified as having sustained an "uncomplicated" first attack (table 1). The death rate during the period of hospitalization among these 611 "good risk" patients was found to be only 3.4%. Of the total of 21 fatalities in the latter group 10 occurred suddenly within the first 48 hours after admission, so that the mortality rate during the subsequent period of hospitalization, when 11 fatalities occurred, was only 1.8%. Thrombotic or thromboembolic complications occurred in only 1.3% of the "good risk" patients, and most of these were of a mild nature. An analysis of the causes of death among the "good risk" patients revealed that in a few of the 10 deaths within the first

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48 hours after hospitalization there was sudden deterioration of the clinical picture with the onset of shock or congestive heart failure followed by a rapid death. Of those patients who died after 48 hours, three died suddenly from rupture of the left ventricle and one patient died shortly after the development of cerebral embolism. Five patients died of unknown causes; in these, recurrent myocardial infarction or thromboembolism was suspected. Two patients died of causes unrelated to the cardiovascular system.

TABLE 2.—*Mortality Rate According to Age and Severity of the Attack*

	Mortality, %	"Good Risk," %	"Poor Risk," %
All ages	33.8	3.4	60.0
Under 60	29.5	3.6	58.7
60 or over	40.3	3.2	61.4

"Poor Risk" Patients.—Of the total group of 1,318 patients, 53.6% presented poor prognostic signs on the day of their first examination on admission to the hospital. The death rate in this group was 60% and the incidence of thrombotic and thromboembolic complications 11.5% (table 1). Analysis of the death rate according to age groups showed an appreciably higher figure for those 60 years of age or older than for those under this age (table 2). Thus, the mortality rates were 40.3% and 29.5%, respectively. Comparison of the mortality rates of these two age groups within a framework of prognostic categories, however, failed to reveal that age exerts a significant influence on survival with attacks of similar severity. Consequently, the higher death rate in older groups is solely due to a higher incidence of serious attacks with advancing years (table 3) and not to a specific influence of age on the outcome of the individual case. Almost two-thirds of the patients 60 years of age or older were "poor risks" on admission to the hospital as compared to less than one-half of those under that age.

COMMENT

The high average mortality rate and incidence of nonfatal complications in acute myocardial infarction has created the erroneous impression that the immediate prognosis in this disease is always grave regardless of the mildness of the clinical picture. Until now there has been virtually no information available regarding the chances for survival in patients sustaining an "uncomplicated" first attack. More specifically, no statistics have been brought forth to date to indicate morbidity and mortality rates in the large segment of coronary patients in whom pain and, perhaps, mild shock are the only significant findings at the time of the first examination. Such information might be of value to the clinician who at present gives a "guarded" prognosis in all such cases even when convalescence is moderately advanced. Our analysis indicates that only 3.4% of the patients who sustained a first attack and presented a benign clinical picture at the time of admission died during the period of hospitalization. This mortality rate is less than that found in pneumococcic pneumonia under modern antibiotic therapy, in which the death rate is commonly recorded as 5%. Moreover, in the "good risk" group in our series, survival beyond the first 48 hours was associated with a subsequent mortality rate of only 1.8%.

From this evidence it would seem that physicians should adopt a more optimistic attitude with respect to the probability of recovery in all "good risk" patients. When such patients have survived the first two or three days there would appear to be even greater justification for such optimism. It should be remembered, however, that these results were obtained with conservative therapy during a three to six week period of bed rest. Consequently, while the basis for optimism appears clear, overconfidence and carelessness on the part of both physician and patient may lead to unfortunate results if unwarranted liberties are taken. It has been repeatedly stated that the most important factor influencing immediate mortality after acute coronary occlusion is the age of the patient. That there is a higher death rate from this disease in older age groups is well known, but this observation has given an erroneous concept concerning the influence of age on survival in the individual case. We have found that the higher death rate in older patients is directly due to the higher incidence of serious attacks in older groups (table 3). When cases of similar mildness or severity were compared, age alone was observed to exert no influence on immediate prognosis (table 2). Consequently, the favorable outlook for recovery in "good risk" patients applies to old age groups as well as to young.

The fact that almost half of the total number of deaths in the "good risk" group occurred within 48 hours of admission suggests a danger, even in these cases, from the psychic and physical trauma attending their removal to the hospital. The practice of administering anticoagulants in all cases of acute myocardial infarction requires almost immediate admission to the hospital and thereby subjects the patient to a risk that is too frequently overlooked. In previous studies [9] we have emphasized that anticoagulants are unlikely to influence the outcome in the "uncomplicated" first attack because of the low incidence of thromboembolism, on the one hand, and the small, though significant, risk of hemorrhage induced by therapy, on the other. In the more serious cases of the disease, however, it does appear likely that anticoagulant therapy exerts a favorable influence on both the death rate and the thromboembolic complication rate.

TABLE 3.—*Analysis According to Age and Severity of Attack*

	Total	"Good Risk" No.	"Good Risk" %	"Poor Risk" No.	"Poor Risk" %
All ages	1,318	611	46.4	707	53.6
Under 60	794	421	53.0	373	47.0
60 and over	524	190	36.3	334	63.7

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SUMMARY AND CONCLUSIONS

An analysis was made of 1,318 consecutive cases of acute myocardial infarction in which the patients were classified as "good risk" or "poor risk" on the basis of certain prognostic criteria on the day of admission to the hospital. It was found that the mortality rate for 611 "good risk" patients during the period of hospitalization was 3.4%, the incidence of thromboembolism 1.3%. In the patients surviving 48 hours, the subsequent death rate was 1.8 per 100 patients. The "good risk" group comprised almost half of the total number of patients in the series. The death rate in this large number of patients was less than that commonly recorded for pneumococcic pneumonia in modern literature. The mortality rate among 707 "poor risk" patients was 60%; the incidence of thromboembolism, 11.5%. Anticoagulant therapy would appear to confer no benefit in "good risk" patients because of the low incidence of thromboembolism in this group and the dangers attendant upon its use. In the more serious cases, however, anticoagulants do appear to exert a favorable influence on both morbidity and mortality statistics. The risk in too early or unnecessary removal of the patient to the hospital should be recognized, since the initial 48 hours following the attack represents a critical period in all cases. Contrary to interpretations derived from crude statistics, the age of the patient does not influence the immediate prognosis with any attack of known severity. The clinical appearance of the patient at the onset of the attack is the best index to the future course of his illness. This evidence justifies a more optimistic attitude than has usually been taken by physician and patient in all "good risk" cases, particularly when survival has extended beyond the first few days of the attack. Overconfidence and carelessness, however, are not warranted as a result of these findings.

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Chronic Pulmonary Diseases.—Probably no other vital organ is heir to as great a variety of morbid processes as is the lung. This peculiarity and vulnerability is related to its anatomic location, structure and physiologic characteristics. Although the lungs must be considered as "internal" organs surrounded by the thoracic cage, the diaphragm, cervical and mediastinal structures, they are directly exposed to the exterior and to numerous noxious agents which pollute the air; and although relatively far removed from many vital organs, their peculiar interposition with regard to the greater and lesser circulatory systems makes them vulnerable to many morbid conditions primarily involving other vital organs. For example: the lungs are a common site of metastatic neoplasms; they constitute a natural setting for fat and air emboli and infarction; they serve as a "receptacle" and favorable culture medium for a wide variety of aerobic and anaerobic bacteria, microbacteria and fungi, which may enter the lungs either directly through the air passages, indirectly by way of the blood and lymphatic systems, or as a result of progression of contiguous pathological processes from neighboring structures. As a consequence of the predilection of the lungs for morbid processes and as a frequent participant in systemic disease, it is readily understood why differential diagnosis and adequate understanding of chronic pulmonary disease is dependent upon some insight and knowledge of most morbid processes which affect the body.—H. McL. Riggins, M.D., The Differential Diagnosis of Chronic Pulmonary Disease. *The Medical Clinics of North America*, May, 1954.

CLINICAL NOTES

CHEST WALL STABILIZATION BY SOFT TISSUE TRACTION

A NEW METHOD

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Human nature being what it is, the rapid increase in the total number of automobiles on the highways and the recent trend toward senseless speed through fantastic increases in horsepower can add up to but one thing, more serious injuries caused by motor car accidents. Since 20 to 25% of the deaths from automobile accidents are due to chest injuries, an increasing number of serious thoracic injuries is to be expected. One of the most pressing problems in the treatment of stove-in thorax is stabilization of the chest wall. Anterior stove-in chest, or the so-called steering wheel injury, presents a particularly difficult problem when the area mobilized is extensive. The paradoxical respiration and the inefficiency of coughing caused by such injuries often threaten life. Normally with each inspiratory effort the anterior ribs rise and the diaphragm descends, enlarging the thoracic cage and drawing air into the lungs. When a substantial area of chest wall is softened by rib fractures, this region tends to sink inward on inspiration and to move outward on expiration. As this occurs, the mediastinum shifts from side to side, comprising first one lung and then the other. Part of the respiratory effort is thus expended in "breathing" from one lung into the other. The same mechanism impairs coughing. The abnormal mobility of the softened area prevents the building up of an effective intrapulmonary pressure for efficient coughing. This leads to retention of pulmonary secretions. All of these factors lead directly and quickly to anoxia. A vicious circle is set up as desperately ill patients struggle for increasing amounts of air only to find the situation made worse by their own efforts. The interruption of this cycle can best be accomplished by stabilization of the chest wall.

The conventional treatment by adhesive tape strapping is satisfactory for such injuries when they are minor. In cases in which the area softened is at all extensive, strapping is not likely to be effective. The use of adhesive tape as a first aid measure is, of course, acceptable. Methods in which traction is placed on ribs by means of clips, tongs, wires, and other devices have been used for years and are well known. In many cases the use of these methods will be satisfactory. In steering wheel injuries, however, the ribs are likely to be so fragmented that it is impossible to use this type of traction. Furthermore, the necessary surgical manipulations in the vicinity of the pleura often result in puncture of the lung and a resultant

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pneumothorax. If this is added accidentally when it did not already exist, a bad situation is made worse.

The more pretentious method of stabilization by open surgical fixation has been reported but is not likely to be as good as it might seem. The thinness and fragility of the anterior rib segments mitigate against firm fixation by wiring, plating, or intramedullary pegging. Most of these patients are in such poor general condition, however, that a major surgical procedure is contraindicated. Two years ago, when confronted by such a problem in a patient having a steering wheel injury with extensive softening and severe paradoxical motion, we devised what we think to be a new method of chest wall stabilization by the use of soft tissue traction.

METHOD

While the patient is under local anesthesia, pins are inserted into the skin at one edge of the softened area. The pins are of stainless steel 9 in. (22.9 cm.) long and 3/32 in. (0.24 cm.) in diameter with a trocar point at one end. These are passed beneath the muscles but superficial to the ribs in a direction calculated to bring them out at the opposite edge of the softened area. Two or three such pins are usually sufficient (fig. 1). Appropriate sterile dressings are applied at each point of skin perforation, and a larger dressing secured by adhesive tape is applied to the general area. Spreader bows are placed on each pin. The chest wall can now be stabilized by holding up the spreader bows while attendants rig

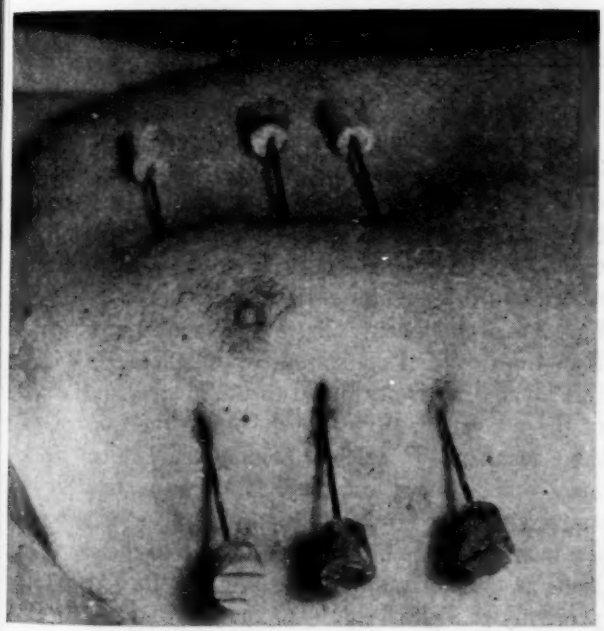

Fig. 1.—Pins in place just prior to removal. Note the absence of any evidence of tissue necrosis.

the frame for overhead traction. Ordinary traction bows can be used if spreader bows are not available; however, it is important to use the spreader type of traction bow to prevent bending of the pins in the soft tissue. For one patient in this series spreader bows were not available and a fair-sized hematoma developed, presumably due to bending of the pins. Once the overhead frame has been set up, weights are adjusted to pull on each spreader bow individually (fig. 2). The amount of weight used will be that which abolishes all paradoxical motion of the softened area. In our cases 7 lb. per pin was used. The patients were all adult males. It is likely that in children or small adults less weight would be required. With the chest wall thus stabilized, any other required treatment for the injured chest may be undertaken. An intercostal nerve block with pro-

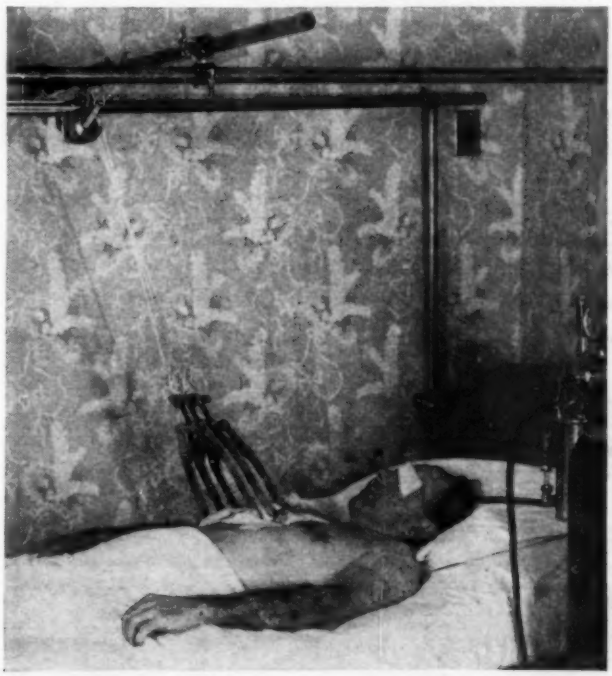

Fig. 2.—Traction applied to the pins by means of spreader bows.

caine (Novocaine) hydrochloride may be performed to alleviate pain. Needle aspiration or closed intercostal drainage may be done if indicated for pneumothorax or hematothorax. Coughing again will be effective.

A daily check of the stability of the softened areas is carried out by temporarily slacking off the weights. As time passes some weight can be taken off if doing so does not permit paradoxical motion to reappear. In all of our cases it was possible to remove the weights on the seventh or eighth day. The pins are best left in place a day or two after removing all weights so that traction may be restarted if necessary. When removing the pins, the sharp ends are cut off with a heavy cutter close to the skin and the pins are pulled out from the side in which they were inserted. This minimizes the possibility of drawing bacteria through the tracts. A hematoma may form in the area, but in none of our patients has this proved a problem. There has been no infection. There has been no tendency to necrosis of soft tissue due to the traction, nor has the pull on the pins produced pain.

Four patients have been treated by this method. Two of these died, one of a brain injury and one of uncontrollable pulmonary edema plus acute renal failure. In both of the patients who died, the chest wall was well stabilized. The other two patients made complete recoveries and have no disabling after-effects due either to the injury or to the treatment.

A NEW DIAGNOSTIC PROCEDURE FOR CANCER OF THE LARYNX USING A RETRACTABLE THROAT BRUSH

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The diagnosis of cancer of the larynx is dependent upon surgical biopsy from a target lesion recognizable by the otolaryngologist. Symptoms such as chronic hoarseness, cough, and hemoptysis are often present before final diagnosis for a variable period of time. A new method of collecting cells from the throat is presented here as a diagnostic aid to biopsy in visual lesions. It is proposed that clinical trials be made to determine the practicability of brush cytology as a screening method for early cancer. The common malignant lesion involving the throat is epidermoid carcinoma, the same type of neoplasm as is commonly encountered in the female uterine

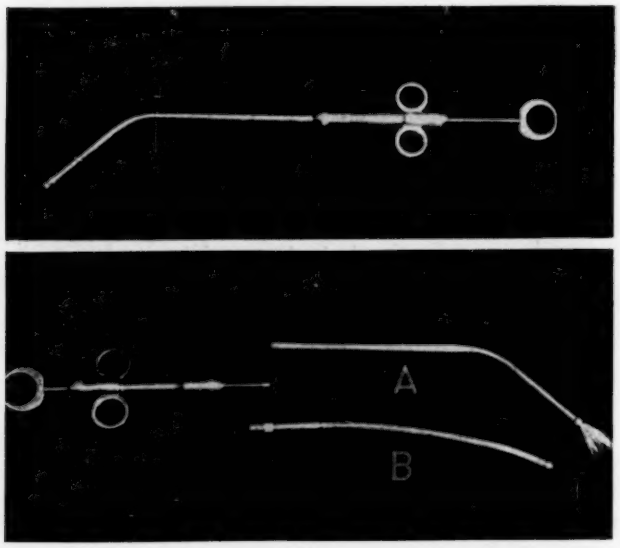

Fig. 1.—Top, throat brush with bristles retracted into metal tip. Bottom, metal tip unscrewed from handle. *A*, bristles extruding from metal tip; *B*, alternative tube of flexible polyethylene used in directing brush toward pharyngeal target lesions.

cervix. The widespread use of the cytological method of detection of cancer of the cervix has proved the extended duration of the preclinical carcinoma-in-situ stage. Direct cervical cell scraping yields diagnostic cells of carcinoma in situ with great accuracy during the period preceding the development of the ulcerating target lesion.[1] A recent report emphasizes the innocent appearance of lesions of the vocal cords proved by surgical biopsy to be carcinoma in situ.[2] Chronically inflamed, reddened patches on the vocal cords that appear innocent may harbor beginning carcinoma. An instrument has been developed to collect surface cells from the vocal cords to permit preliminary cytological study and diagnosis of benign and malignant growths. Malignant cell-brushings should be confirmed by histological study prior to therapy.

TECHNIQUES AND METHODS

The recent introduction of brush cytology into the field of gastric cancer diagnosis [3] has stimulated the development of new methods that may permit the application of brush cytology to previously inaccessible tissues. The retractable throat brush (Ayre) described here has been designed in such a way as to enable the rapid brushing of the vocal cords by a retractable brush that rotates through 360 degrees and so collects a rich concentration of cells and secretion (fig. 1). Rotation of the brush while in contact with the tissues permits the sweeping of a better tissue area, thus increasing the effective range of the diagnosis procedure. The curvature of the metal tube follows the natural curve of the tongue and posterior pharynx. Simple design permits the use of the brush under direct visualization by the otolaryngologist. Early tests suggest that the instrument may prove useful for blind brush surveys of the vocal cord area for detection or screening. While local anesthesia of the throat may at times be indicated the brush procedure is so rapid that the irritation resulting from its use is of short duration and is well tolerated without anesthesia.

PRINCIPLE OF BRUSH CYTOLOGY

It has been observed during experimentation with various types of bristles that natural boar's bristles exert some attraction for epithelial cells and mucus. The boar's bristles are flagged at the end and possibly this helps to ensnare cells that adhere to the bristles. Brushing removes cells by gentle scraping action; and selectively larger numbers of malignant cells will be shed from neoplasms than from normal epithelium where there is a greater resilience. This is attributed to the low calcium content of the malignant cell as contrasted to the normal cell.[4] As a result of low calcium content the intercellular cement breaks down and there is a greater tendency for malignant cells to break apart.[5] Before withdrawing the instrument the brush is retracted into the sleeve that protects the cell sample. The cells are then transferred promptly to a glass slide (fig. 2).

CYTOLOGY OF THROAT

Cell-brushings from the vocal cords reveal large numbers of squamous epithelial cells whose morphological pattern may be normal or may be of inflammatory or malignant type. In the presence of carcinoma rich concentrations of malignant cells frequently present conclusive diagnostic evidence that may be confirmed by histological studies. Often glandular cells will be found on the brush samples; this is apparently due to shedding of cells from adenoid patches of the pharynx.

From the Cancer Institute at Miami, Cancer Research and Cytology Center.

Read at the Third Annual Seminar and Conference on Cancer Cytology, Miami, Fla., April 23, 1954.

These studies have been assisted by a grant from the Public Health Foundation for Cancer and Blood Pressure Research, Inc.

Dr. Nathaniel Levin of Miami assisted in the development of the technique reported on in this paper.

1. Ayre, J. E.: Cancer Cytology of the Uterus: Introducing a Concept of Cervical Cell Pathology, New York, Grune & Stratton, 1951.

2. Miller, A. H., and Fisher, H. R.: Carcinoma-in-Situ of the Larynx, Ann. Otol. Rhin. & Laryng. **62**: 358-370 (June) 1953.

3. Ayre, J. E., and Oren, B. G.: A New Rapid Method for Stomach-Cancer Diagnosis: The Gastric Brush, Cancer **6**: 1177-1181 (Nov.) 1953.

RESULTS

In a preliminary test series the throat cytology was studied in 142 patients. Sixteen of these showed malignant cell-brushings and results in nine cases were classed as "suspicious." In 14 histological follow-ups, 10 of the positive cases were confirmed, as were 2 of the suspicious. A biopsy was performed in one suspicious case, but no malignancy found, and one case was reported as false negative diagnosis.

COMMENT

The need for a screening method for early cancer of the throat has been emphasized by recent publicity on the importance of ruling out malignancy in heavy smokers suffering from throat irritation. It is suggested that a simple technique such as that described here may play a useful role in annual cancer examinations and in examination of patients suffering prolonged hoarseness or throat irritation. Such persons should be observed closely, and detection procedures that may play a useful role in the recognition of malignancy at an earlier and more favorable stage would seem to be worth while. If the

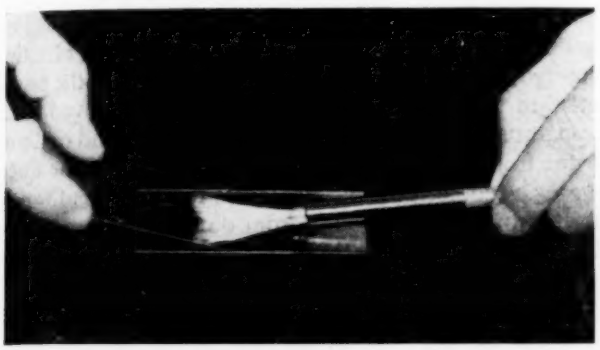

Fig. 2.—Transfer of cell sample from bristles to glass slide. By gentle pressure and traction cellular material is expressed from brush onto underlying glass slide, concentrating cellular material and facilitating microscopic search for abnormal cells.

examining physician fails to check the cytology of an irritated throat the patient may not return to the doctor's office for a long period during which an early lesion may progress to an intractable stage of malignancy. The seriousness of the problem of cancer of the throat would seem to justify every effort that may lead to earlier diagnosis of malignancy.

1155 N.W. 14th St.

4. Chambers, R., and Zweifach, B. W.: Intercellular Cement and Capillary Permeability, Physiol. Rev. **27**: 436-463 (July) 1947.

5. Coman, D. R.: Mechanism of Invasiveness of Cancer, Science **105**: 347-348 (April 4) 1947. Carruthers, C., and Suntzeff, V.: Calcium Copper, and Zinc in Epidermal Carcinogenesis of Mouse and Man, Cancer Res. **6**: 296-297 (June) 1946.

Contract Practice.—Contract practice as applied to medicine means the practice of medicine under an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization, political subdivision or individual, whereby partial or full medical services are provided for a group or class of individuals on the basis of a fee schedule, or for a salary or for a fixed rate per capita.

Contract practice per se is not unethical. Contract practice is unethical if it permits of features or conditions that are declared unethical in these Principles of Medical Ethics or if the contract or any of its provisions causes deterioration of the quality of the medical services rendered.—*Principles of Medical Ethics of the American Medical Association*, chapter 7, section 3, June, 1954.

COUNCIL ON FOODS AND NUTRITION

ACCEPTED FOODS

The following products have been accepted as conforming to the rules of the Council.

JAMES R. WILSON, M.D., *Secretary.*

Mead Johnson and Company, Evansville, Ind.

Powdered Lactum.

Ingredients: Whole milk and Dextri-Maltose with added vitamin D (calciferol).

Analysis (submitted by manufacturer).—Total solids 97.5%, moisture 2.5%, ash 4.5%, fat 19.5%, protein (N × 6.38) 19.0%, carbohydrate: from milk 26.3%, from added Dextri-Maltose 28.2%.

Vitamins and Minerals	Per 100 Gm.
Vitamin D	500 U. S. P. units per reconstituted quart
Calcium	670 mg.
Phosphorus	500 mg.
Iron	1 mg.

Calories.—4.66 per gram; 133 per ounce by weight.

Use.—In infant feeding.

Liquid Sobee.

Ingredients: Soya flour, Dextri-Maltose, sucrose, soya oil, coconut oil, calcium carbonate, calcium phosphate, sodium chloride, vitamin A palmitate, calciferol, chondrus extract, and water.

Analysis (submitted by manufacturer)

	Undiluted, % (w/v)	Diluted (1:1), % (w/v)
Water	71.5	85.8
Protein	6.5	3.2
Fat	5.2	2.6
Carbohydrate	15.5	7.7
Crude fiber	0.3	0.2
Ash	1.0	0.5

Minerals (mg. per 100 ml.)	Undiluted	Diluted (1:1)
Calcium	210	100
Phosphorus	100	50
Potassium	270	130
Sodium	110	50
Chlorine	100	50
Magnesium	40	20
Iron	1	0.5

Vitamins (mcg. per 100 ml.)	Undiluted	Diluted (1:1)
Thiamine	40	20
Riboflavin	60	30
Niacinamide	412	200
Pyridoxine	92	45
Pantothenic acid	248	125
Inositol	20 mg.	10 mg.
Biotin	9.2	4.6
Choline	42 mg.	21 mg.
Vitamin A	540 I. U.	270 I. U.
Vitamin D	80 I. U.	40 I. U.

Calories.—40 per fluid ounce; 20 per ounce when diluted with an equal amount of water.

Use.—In feeding of infants allergic to milk.

Webster-Thomas Company, Boston.

Matchless Brand Dietetic Pack Unpeeled Halves Apricots.

Ingredients: Apricots processed and packed in water without any added sugar or salt.

Analysis (submitted by distributor).—Total solids 8.2%, moisture 91.8%, ash 0.4%, fat (ether extract) 0.1%, protein (N × 6.25) 0.5%, crude fiber 0.3%, carbohydrates (by difference) 6.9%, ascorbic acid 3.9 mg./100 gm., sodium 3.36 mg./100 gm.

Calories.—0.31 per gram; 8.8 per ounce.

Use.—In low calory, low sodium, and other therapeutic diets.

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BLOOD FRACTIONATION

The problem of preserving blood is greatly simplified when it is reduced to the preservation of its individual components. It has been estimated that the average adult body contains about 5 liters of blood, of which 2.75 liters is plasma, 2.22 liters is erythrocytes, 0.02 liter is platelets, and 0.01 liter is leukocytes.[1] The blood fractionator developed under the direction of the late Dr. E. J. Cohn at Harvard University is an ingenious device which provides a continuous closed mechanical system for taking blood from a vein, separating it into the elements named, and packaging the fractions in sterile plastic containers. The apparatus is housed in a portable cabinet.

In order to prevent coagulation, calcium must be removed from the blood without delay. This is accomplished by passage of the blood through an exchange resin which gives up sodium and takes up calcium without damaging the cells. The resin beads also hold back the platelets. Because blood adheres to glass and rubber and because this damages the cellular elements, all tubing and containers are composed of a nonwettable plastic material. Damage to cells is further prevented by coating interior metallic surfaces with silicone and the interior of the intravenous needle with a nonwettable substance. To reduce chemical changes to a minimum the blood is cooled to near freezing within a few seconds after it is drawn. It then passes through a centrifuge. The apparatus works so swiftly that when the attendant removes the needle from the donor's vein the erythrocytes are in the upper chamber of the centrifuge, the leukocytes are in the lower chamber, and the plasma is in a plastic container. The centrifuge is then stopped, and the erythrocytes and leukocytes fall into their separate containers. The platelets are then washed out of the ion exchange resin and stored in a gelatin-containing medium. This medium keeps the individual platelets from impinging on each other and thereby makes it possible to preserve their clot-promoting activity for several months. A similar method has been tried on the leukocytes, but as yet no method of preserving them has been found. The apparatus does, however, provide a means of collecting these cells in quantity so that they can be used for further study.

The plasma thus collected can be further fractionated in the laboratory as desired, there being at least 26 identifiable substances present in varying amounts. These range from serum albumin, which accounts for about 52% of the plasma, to traces of various enzymes. If the plasma is treated with a minute quantity of a zinc compound and centrifuged, the gamma globulin and fibrinogen are precipitated out. These are then separated by a simple ion exchange process. Gamma globulin is relatively stable either in solution or in the dried form. The virus of infectious hepatitis disappears from the solution on storage but not from the dried form. Purified fibrinogen is very stable when dried and with thrombin may be used to control surgical or postpartum hemorrhage. Plasma from which the gamma globulin and fibrinogen have thus been removed is called SPPS (stable plasma protein solution) and consists mostly of serum albumin. So far as is known viruses do not remain in this fraction, but as a matter of precaution it is pasteurized at 140 F for 10 hours. This may then be stored without refrigeration for years and used in any situation in which plasma is indicated.

This new apparatus achieves maximal economy in the use of blood by separating the blood into its various constituents, thus permitting further study of the special role of each. The fraction that is needed for a specific condition may then be selected. When each fraction is stored under conditions optimal for it, the period of effective storage can be greatly prolonged and the risk of the transmission of pathogenic viruses virtually removed. The apparatus can also be used to salvage SPPS and erythrocytes from banked blood that has been stored for three weeks. Another possible use of the apparatus is for collection of gamma globulin from donors who are hyperimmune to poliomyelitis. After removal of the gamma globulin, the rest of their blood would be reinjected. Such a donor would lose little vital fluid and could donate globulin as often as once a week.

1. Surgenor, D. M.: Blood, Scient. Am. **190**: 54-62 (Feb.) 1954.

ANTENATAL Rh ANTIBODY TESTS

The purpose of antenatal antibody tests is to determine before delivery which Rh-negative expectant mothers have become sensitized, so that Rh-negative blood of a compatible A-B-O group can be made available to treat the baby promptly after birth, when necessary. In this way, lives of erythroblastotic babies can be saved and among affected babies who survive neurological sequelae can be prevented. Every Rh-negative multipara who has had a previous Rh-positive baby is a possible candidate for Rh sensitization, which may develop at any time during a pregnancy. If Rh sensitization does develop, it is probable that the baby will be erythroblastotic and may require treatment by exchange transfusion.

The first Rh antibody test should be done as soon as the patient becomes pregnant, to determine whether the patient is already sensitized at the beginning of the pregnancy and, if she is, what the level of the antibody titer is. Since antibody titrations have a large degree of experimental error, if the patient is sensitized, the titrations should be done several times and the results averaged, in order that the initial titer values obtained may be as accurate as possible.

If the mother is sensitized, moreover, an attempt should be made to determine whether the husband is homozygous or heterozygous for the Rh_0 factor. This

often can be determined by typing the bloods of any living children and the parents of the husband if they are available. If any child of an Rh-positive person or either of his parents is Rh negative, then the person must be heterozygous for the **Rh_o** factor. By this method it is never possible to establish with certainty that a person is homozygous, though if there are very many children in a family all of whom are Rh positive it becomes highly probable that the parent in question is homozygous. When neither children nor parents are available for Rh testing, it may nevertheless be possible to infer the probable genotype of a person by determining his complete Rh-Hr type; for example, persons of type Rh_1rh are generally heterozygous (genotype R^1r) for the **Rh_o** factor, though they may occasionally prove to be homozygous (genotype R^1R^o). On the other hand, persons of type Rh_1Rh_1 or type Rh_1Rh_2 are almost always homozygous for the **Rh_o** factor.

If the expectant Rh-negative mother is sensitized to the **Rh_o** factor, while her husband is homozygous for the **Rh_o** factor, there is hardly any doubt that the fetus in utero is erythroblastotic, and the severity of the manifestations is correlated with the height of the maternal Rh antibody titer, although exceptions to this rule are not infrequent. For example, if the antibody titer is extremely high, a stillbirth is almost inevitable. With antibodies of very low titer, on the other hand, a mildly affected baby or even a subclinical case is to be expected, and full recovery generally results without treatment. With intermediate titers typical erythroblastotic babies result, and here the outcome depends in a large degree on the management of the case. If the husband is heterozygous for the **Rh_o** factor, there is a 50% chance that the expected baby may be Rh negative, in which case the maternal Rh antibodies cannot harm the baby. It is in this type of case that periodic antenatal Rh antibody tests are most valuable. If a significant rise in titer occurs during the pregnancy, this is definite proof that the fetus in utero is Rh positive, and an erythroblastotic baby is to be expected, even though the father may be heterozygous. Failure of the antibody titer to rise during the pregnancy leaves open the question whether the baby is Rh positive or Rh negative.

The frequency with which antenatal Rh antibody tests should be done varies with the nature of the case, and there is no fixed regimen. In fact, there is wide latitude among the procedures adopted by different workers. After the initial test done at the beginning of the pregnancy, it is recommended that the antibody tests be done again at the sixth month. Thereafter, in nonsensitized expectant mothers the test should be repeated at four to six week intervals until term, while in sensitized expectant mothers the tests should be done more frequently, as often as once a week during the last month of the pregnancy.

With regard to the question of early delivery, this, if it is carried out at all, should be reserved for cases in which the expected baby will almost surely be erythroblastotic. Delivery should be accomplished from below by induction of labor, preferably about two weeks before term. Too early delivery is to be avoided, because premature erythroblastotic babies appear to be particularly susceptible to nuclear damage. On the other hand, postmaturity is to be avoided, since excessively large babies are subject to birth trauma, and this also prolongs unnecessarily the period of exposure to the Rh antibodies. Erythroblastotic babies do not appear to stand cesarean section well, so that this operation should be reserved only for those cases in which an obstetric indication makes the operation imperative.

HANDLING OF RADIOACTIVE CADAVERS

Many patients are given tracer doses of radioactive isotopes as a diagnostic procedure. In the event of an accidental death such a patient constitutes no radiological hazard because the tracer doses used are small. Radioactive gold (Au^{198}) and radioactive iodine (I^{131}) are, however, used therapeutically. This is done only in a hospital, and the hospital is required to have a radiation safety officer. No patient receiving isotopes should be discharged from the hospital until his radioactivity is down to 30 mc. If such a patient dies suddenly after leaving the hospital, there is no radiological hazard in performing an autopsy or embalming the body. The maximum dose of Au^{198} or I^{131} is 150 mc., and although these isotopes are not given to moribund patients death may occur unexpectedly within two weeks after such a dose. In such a case the physician pronouncing the patient dead must attach copies of a warning form to the death certificate and to the outside of the clinical record. These must be completed before the body is turned over to the undertaker. The hazard to a pathologist performing an autopsy on such a patient depends on how much time has elapsed since the last dose of the isotope, the size of the dose, and which isotope was given.

With these data, which should be readily available on the clinical record, the pathologist may estimate the level of radioactivity of the body by consulting a table in a handbook prepared by the Bureau of Standards.[1] For convenience this table shows in italics the levels for which no precautions are necessary. Should the level appear to be unsafe (5 mc. or more), the radiation safety officer should be consulted before autopsy is performed. Such an autopsy should never be performed without gloves, preferably heavy rubber gloves with gauntlet tops. If the gloves are torn during the autopsy they must be removed, placed in a special container for disposition by the radiation safety officer, and the operator must wash his hands in a large quantity of running water. If the pathologist has incurred a minor wound he may put on fresh gloves and proceed, but, if the wound is more severe, an assistant must carry on for him.

If the level of radioactivity in the body is high, the radiation safety officer must prescribe a time limit for any one pathologist to work on the body and assistants must be used in relay to complete the autopsy. Organs from such a body treated with Au^{198} should be refrigerated or fixed and stored for several days before processing for microscopic examination. If the body is highly radioactive, it should be embalmed in the hospital morgue rather than at an undertaking establishment. In that way the radiation safety officer can prescribe and supervise the precautionary measures to be taken.

1. Safe Handling of Cadavers Containing Radioisotopes, U. S. Department of Commerce, National Bureau of Standards, Handbook no. 56, 1953.

MEDICAL NEWS

ARKANSAS

Special Meeting of House of Delegates.—On Oct. 31, for the second time in its history, the Arkansas Medical Society will hold a special session of its house of delegates and the membership at large. The meeting will be held in Little Rock for the purpose of reviewing and discussing national and state legislation.

CALIFORNIA

Meeting on General Practice.—The California Academy of General Practice will hold its scientific assembly Oct. 24 to 27 at the Hotel Statler, Los Angeles. On Sunday at 2 p. m. Dr. Carlo S. Scuderi, Chicago, will present the Ivan C. Heron lecture, "Common Fracture Problems of the Lower Extremities," under a Wyeth, Inc., grant. At 4 p. m. Dr. Walter C. Alvarez, Chicago, will deliver the Stanley R. Truman lecture, "Unrecognized Psychotic Conditions," under a similar grant. The Monday sessions will open with "Care of the Infant for the First Six Months" by Dr. Arild E. Hansen, Galveston, Texas (presented under a Lederle grant). Dr. Louis P. Gambee, Portland, Ore., will consider "The Sequelae of Silent Gallstones" at 11:30 a. m. and "Gastrointestinal Diverticula" at 1:30 p. m. The Tuesday sessions will be opened by Dr. Robert B. Greenblatt, Augusta, Ga., whose topic will be "Uses and Abuses of Endocrine Therapy." Tuesday afternoon the following presentations will be made:

Medical Management of Arthritis, W. Paul Holbrook, Tucson, Ariz.
Vascular Hypertensive States, Hans H. Hecht, Salt Lake City (presented under a Lederle grant).
Diagnosis of Accessible Cancer, Danely P. Slaughter, Chicago (presented under an American Cancer Society, California division, grant).

A dinner party is scheduled for 7 p. m. Tuesday. The sessions will end with presentation on Wednesday at 11 a. m. of "Newer Uses in Antibiotic Therapy" by Dr. William M. Kirby, Seattle.

CONNECTICUT

Scholarships for Medical Students.—The Connecticut State Medical Society offers a number of scholarships of $500 each to students who are in their final year in an approved medical school in the United States or Canada and whose homes are in the state of Connecticut. Information concerning these scholarships and application forms, which must be submitted before Nov. 15, may be obtained from Dr. Creighton Barker, Executive Secretary, Connecticut State Medical Society, 160 St. Ronan St., New Haven.

Personal.—Dr. Frederick C. Redlich, professor of psychiatry and chairman of the department of psychiatry at Yale University School of Medicine, New Haven, has gone to Europe and Israel, under the auspices of the Social Research Foundation and the foundation's Fund for Research in Psychiatry, on an inspection trip of psychiatric research in progress. He will visit psychiatric institutions in Spain, Italy, Austria, Germany, Switzerland, Holland, Great Britain, and Israel and, as a consultant to the U. S. Army, will visit military installations in Austria and Germany.——Dr. Stevens J. Martin, director, department of anesthesiology at St. Francis Hospital, Hartford, and president, American Society of Anesthesiologists, was guest lecturer at the second Latin American Congress of Anesthesiologists, which met jointly with the Brazilian Society of Anesthesiologists in São Paulo, Brazil, Sept. 12 to 18. Dr. Martin gave a paper and demonstration concerning "Pediatric Anesthesia." He also presented other discussions in Lima, Peru, and Rio de Janeiro, Brazil.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

FLORIDA

Society News.—The Heart Association of Greater Miami will have as speaker, Oct. 28, 8:15 p. m. in Memorial Hall, Jackson Memorial Hospital, Miami, Dr. Carl J. Wiggers, Cleveland, who will lecture on a cardiovascular topic.

Appoint Director of Blood Bank.—Capt. Lloyd R. Newhouser, U. S. N. (MC), retired, has been appointed director of the Blood Bank and associate director of the Medical Research Foundation of Dade County. Captain Newhouser, who was retired from the Navy for physical disability on Sept. 1, planned and put into operation the entire whole-blood program in the Pacific war area during World War II, for which service he was awarded the Legion of Merit.

GEORGIA

Pediatricians Meet in Atlanta.—The 22nd annual scientific meeting of the Georgia Pediatric Society will be held Oct. 28 at the Mayfair Club, 1450 Spring St., N. W., Atlanta. During the afternoon session, starting at 2 p. m., "New Developments in Immunization" will be discussed by Dr. Margaret H. Smith, associate professor of microbiology, Tulane University of Louisiana School of Medicine, New Orleans; "Current Status of Antibiotics in Pediatric Practice" by Dr. Benjamin M. Kagan, associate professor of pediatrics, Northwestern University Medical School, Chicago; and "The Clinical Significance of the Newer Knowledge of the Blood Proteins" by Dr. Charles A. Janeway, professor of pediatrics, Harvard Medical School, Boston. At the evening session, 7:30 p. m., Dr. Janeway will present "The Syndrome of Abnormal Susceptibility to Infection with Particular Reference to Staphylococcus Aureus"; Dr. Kagan, "Recent Advances in Infant Feeding"; and Dr. Smith, "Diseases of Domestic Animals in Relation to Children."

ILLINOIS

General Practice Meeting in Chicago.—The Illinois Academy of General Practice will hold its annual scientific assembly at the Sheraton Hotel, Chicago, Oct. 26 to 28. Dr. Pliny R. Blodgett, Chicago Heights, president, will serve as moderator for the round-table luncheon Wednesday noon, and Dr. Dewey M. Roberts, Alton, president-elect, as moderator for the round-table luncheon Thursday. Dr. William B. Hildebrand, Menasha, Wis., president, American Academy of General Practice, will address the annual banquet Wednesday, 7:30 p. m., when his topic will be "A Look Ahead." Dr. George A. Hellmuth, Milwaukee, will discuss "Emergency Treatment of Cardiac Arrhythmia" Wednesday at 3:45 p. m. Thursday at 9:05 a. m. a symposium on the Rh factor will be presented by Drs. Israel Davidsohn, Kurt Stern, Ben W. Lichtenstein, William A. Smallberg, Philip L. Aries, and Charles Fields, all of Chicago.

Chicago

Course on Bronchoesophagology.—The University of Illinois College of Medicine will present a course on bronchoesophagology, Nov. 8 to 20, under the direction of Dr. Paul H. Holinger. Interested registrants may write to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12.

De Lee Lecture.—The 1954 Solomon T. De Lee lecture will be given Oct. 28, 5 p. m., in Dora De Lee Hall of the Chicago Lying-In Hospital at the University of Chicago. Dr. Richard J. Blandau, professor of anatomy of the University of Washington School of Medicine, Seattle, will illustrate his lecture, "Ovulation, Egg Transport and Fertilization Phenomena," by a motion picture showing egg transport. The profession is cordially invited.

Symposium on the Myocardium.—Dr. William B. Wartman will serve as moderator for a symposium on the myocardium presented by the scientific section of the Chicago Heart Association at the Chicago Academy of Sciences, 2001 N. Clark St., Oct. 26, 8 p. m. "Histochemical Changes of Glycogen" will be considered by Dr. Wartman and "Recent Advances in the Metabolism of the Myocardium" by Dr. William V. Whitehorn. Incoming calls may be made to LIncoln 9-0606. All physicians are welcome.

INDIANA

State Medical Meeting.—The Indiana State Medical Association will hold its 105th annual convention at Murat Temple, Indianapolis, Oct. 24 to 27 under the presidency of Dr. William H. Howard, Hammond. A symposium, "Medical and Surgical Emergencies," will be presented Tuesday at 9:35 a. m. Persons attending the meeting are invited to bring films to the luncheon meeting of the state and county tuberculosis committees, in which the Indiana chapter of the American College of Chest Physicians and the Trudeau Society will participate. Dr. Andrew C. Offutt, Indianapolis, state health commissioner, will have as his subject "Management of Recalcitrant Tuberculosis Patients." The x-ray conference will follow. Tuesday afternoon there will be a panel discussion, "Newer Developments in Medicine." The dinner meeting and 20th anniversary reunion of the class of 1934, Indiana University School of Medicine, Indianapolis, will be held at 6 p. m. at the Indianapolis Athletic Club and the president's night at the Murat Theater at 8 p. m. Dr. Howard will give the presidential address, and entertainment will be furnished by the Indianapolis Symphony Orchestra. A medicolegal economic session is scheduled for Wednesday, 11 a. m. to 12 noon. Wednesday afternoon the section on preventive medicine and public health will present a symposium, "The Health Officer Looks at the Polio Vaccine Validity Trial." The sessions will close with the annual dinner Wednesday, 6:30 p. m., at which Dr. Elmer Hess, Erie, Pa., President-Elect of the American Medical Association, will be the speaker. Other out-of-state speakers during the scientific sessions will include:

R. Arnold Griswold, Louisville, Ky.: Surgical Emergencies.
George L. Thorpe, Wichita, Kan.: General Practice Emergencies.
Paul H. Lorhan, Kansas City, Kan.: Anesthesia Emergencies.
George F. Wilkins, Boston: The Role of the General Practitioner in Industrial Medicine.
Fremont A. Chandler, Chicago: Industrial Backs.
Allan C. Barnes, Cleveland: The Use of Radioisotopes in the Treatment of Pelvic Malignancy.
Bruce Proctor, Detroit: Technique of Radical Neck Dissection.
John R. Haserick, Cleveland: Modern Concepts of Lupus Erythematosus.
William W. Frye, New Orleans: Evaluation of the Antibiotics.
Joseph H. Hafkenschiel, Philadelphia: Newer Drugs in Hypertension.
Mr. Joseph F. Leopold, Dallas, Texas: Why Does Our Government Compete with Its Taxpayers?
John S. DeTar, Milan, Mich.: The Problems Facing Family Physicians Today.

The annual golf tournament and trap shoot are scheduled for Monday morning, and on Monday evening the reception and annual dinner meeting for women physicians (Indianapolis Athletic Club); buffet supper, smoker, and stag party (Murat Temple); and entertainment for physicians, their wives, and guests (Murat Theater) will be held.

MASSACHUSETTS

Worcester Foundation Day.—Gov. Christian A. Herter recently issued a proclamation declaring that Sept. 8 should be known and recognized throughout the state of Massachusetts as "Worcester Foundation Day," thus giving official support to the Worcester Foundation's annual "Heroes of Science" stamp campaign, which opened on that day. The sale of "Heroes of Science" stamps helps raise funds to support the foundation's nonprofit basic research in cancer, arthritis, heart disease, mental illness, muscular dystrophy, and many other fields.

Edward K. Dunham Lectures.—Three lectures under the Edward K. Dunham Lectureship for the Promotion of the Medical Sciences will be delivered at 5 p. m. in the Harvard Medical School amphitheater, Building C, 25 Shattuck St., Boston, by Prof. Konrad Z. Lorenz, departmental director, Max Planck Institute for Physiology of Behavior, Westphalia, Germany, whose theme, "The Approach to Behavior Study from the Viewpoint of Comparative Phylogenetics," will include "Innate Motor Patterns" (Oct. 25), "Innate Releasing Mechanisms" (Oct. 27), and "The Organization of Innate Behavior" (Oct. 29). A fourth lecture, "The Problems of Expression Movements and Ritualization," under the auspices of the departments of biology and psychology, Harvard University, will be given at 5 p. m., Nov. 1, at Harvard College (room 18, Geographical Institute, 2 Divinity Ave., Cambridge). The lectureship, founded in 1923 in memory of Dr. Edward K. Dunham, seeks to bind closer "the bonds of fellowship and understanding between students and investigators in this and foreign countries." The lectures are "free and open to the faculty and students of the Harvard Medical School and College, and all other interested professional persons who may profit by them."

MICHIGAN

Symposium on Hypophyseal Growth Hormone.—A three day International Symposium on the Hypophyseal Growth Hormone, sponsored by the Henry Ford Hospital and the Edsel B. Ford Institute for Medical Research, will be held in the new clinic building auditorium of the Henry Ford Hospital, Oct. 27 to 29. The discussions will cover bioassay, preparation, and physicochemical properties of growth hormone; effects of growth hormone on the mammary gland, skeletal system, connective tissue, islets of Langerhans, kidneys, gastrointestinal tract, and tissue cultures; growth hormone and energy sources; effect of growth hormone on cellular systems; influence of growth hormone on lactation; and its metabolic effects in man. Interested persons should write to the Program Committee, Henry Ford Hospital, Detroit 2. Invitations will be sent to as many persons as possible.

MISSOURI

Meeting of General Practitioners.—The Missouri Academy of General Practice will hold its sixth annual assembly at the Governor Hotel, Jefferson City, Oct. 26 to 28. The meeting will open at 11 a. m. with presentation of "Under- and Postgraduate Medical Education" by Dr. E. Sinks McLarty, Galveston, Texas. Dr. Raymond D. Pruitt, Rochester, Minn., the luncheon speaker, sponsored by the Missouri Heart Association, will have as his topic "In the Aftermath of Myocardial Infarction." Dr. William L. Watson, New York, will deliver "The Etiology and Incidence of Lung Cancer" at 2 p. m. under the sponsorship of the American Cancer Society, after which Drs. Joseph A. Hardy Jr., St. Louis, and Daniel L. Yancey, Springfield, will present a panel on backache in women. The banquet, 7:30 p. m., will be addressed by Mr. John Thornberry, Kansas City, newscaster and commentator. Thursday, 8:30 a. m., Dr. John G. Young, Dallas, Texas, will speak on the premature infant, after which Dr. Pruitt will discuss "Disordered Action of the Heart" and Dr. Watson, "Aids to the Early Diagnosis of Lung Cancer" (sponsored by the American Cancer Society). Drs. McLarty, Young, Pruitt, and Watson will participate in the round-table luncheon at 12 noon. Dr. Young will then discuss "Prevention of Behavior Problems in Children," and Dr. McLarty will speak on preceptorship.

NEBRASKA

Meeting of Omaha Clinical Society.—The Omaha Mid-West Clinical Society will hold its 22nd annual assembly at the Hotel Paxton, Omaha, Oct. 25 to 28 under the presidency of Dr. B. Carl Russum, Omaha. At 11:20 a. m. Monday Dr. M. Digby Leigh, Vancouver, B. C., Canada, will discuss "Obstetrical Anesthesia," and at 12 noon Dr. Philip J. Hodes, Philadelphia, will talk about "Less Common Manifestations of Bronchogenic Carcinoma." Dr. Leigh will lead a discussion on emergency treatment of complications in anesthesia at the buffet luncheon, 1 p. m., and Dr. Henry L. Bockus, Philadelphia, will be discussion leader at dinner, when the topic will be "Role of Roentgenology in Gastroenterology." Tuesday at 11:15 a. m. there will be panel discussion on hepatitis, occupational hazards, and newer thera-

peutic agents in cardiovascular diseases. Discussion of "The Brain Damage Syndrome—An Increasingly Important Pediatric Problem" at the buffet luncheon, Tuesday, 1 p. m., will be led by Dr. Eric Denhoff, Providence, R. I., and the dinner discussion Tuesday, "Common Foot Ailments," by Dr. Wallace H. Cole, St. Paul. Dr. Henry A. Schroeder, St. Louis, will be discussion leader at luncheon Wednesday, when the topic will be "New Drugs in the Treatment of Hypertension," and Dr. Morris B. Bender, New York, will lead a discussion on management of neurological problems at dinner Wednesday. Thursday at 11:15 a. m. the following panel discussions have been scheduled: "Anorectal and Colon Disease," "Medical Effects of Alcohol," and "Prolonged Labor." These discussions will be followed by buffet luncheon ("Tubal Ectopic Pregnancy") with Dr. Charles S. Stevenson, Detroit, as leader. Dr. Richard K. Gilchrist, Chicago, will be leader at the dinner Thursday, when the discussion will be concerned with simplification and economic gain derived from improved operating room technique. Other distinguished guests and their first presentations include:

Clinton W. Lane, St. Louis: Mucous Membrane Lesions.
Julius Lempert, New York: New Theory for the Correlation of the Pathology and the Symptomatology of Meniere's Disease.
Clifford M. Harden, Ph.D., Lincoln: How Medicine Looks to Me.
Robert H. Flinn, Battle Creek, Mich.: Federal Civil Defense Medical Program.

NEW JERSEY

Amputee Clinic.—The Kessler Institute for Rehabilitation, West Orange, will conduct a free clinic for children with congenital amputations Oct. 30. The morning will be devoted to orientation lectures by staff and visiting specialists, and the examination clinic for the children will be conducted in the afternoon. Parents should arrange to have a physician refer the child to the institute. Interested professional persons are invited to attend the full-day program.

NEW YORK

Wadsworth Lecture.—The fifth Augustus B. Wadsworth lecture will be given at the division of laboratories and research, New York State Department of Health, Albany, Oct. 28. Dr. Fred W. Stewart, Memorial Center for Cancer and Allied Diseases, New York, will have as his subject "Wadsworth and Ewing: Problems That Would Interest Them Today."

Meeting on Heart Disease.—A postgraduate teaching day program on heart disease for physicians and medical students, sponsored by the heart committee of the Health Association of Rochester and Monroe County in cooperation with the state health department, the Rochester Academy of Medicine, and the Medical Society of the County of Monroe, will be held at the Academy of Medicine, 1441 East Ave., Oct. 28, 2 to 5 p. m. Dr. E. Cowles Andrus, Baltimore, president of the American Heart Association, will discuss "Clinical and Physiological Consequences Following Surgical Treatment of Mitral Stenosis," and Dr. Harold D. Levine, Boston, will present "Modifying Factors in the Diagnosis of Angina Pectoris."

Heart Day.—The Utica Academy of Medicine and the medical societies of the counties of Oneida, Herkimer, and Madison announce the following program for Heart Day at the Hotel Utica, Oct. 28, beginning at 1:30 p. m.:

H. A. Snellen, Leiden, The Netherlands: Collateral Circulation to the Lungs in Pulmonary Atresia, Clinical and Anatomical Data.
Janet S. Baldwin, New York: Angiocardiology and Cardiac Catheterization as Diagnostic Aids, Particularly Related to Congenital Heart Disease.
Walter H. Abelmann, Boston: Contributions of Clinical Pulmonary Physiology to Evaluation of Patients with Cardio-Pulmonary Problems.
Benedict J. Duffy Jr., Washington, D. C.: Radioactive Isotopes in Diagnosis and Treatment of Heart Disease.

After 6 o'clock dinner the evening session will convene at 7:30 p. m. to hear Dr. Gustav Nylin, president, European Society of Cardiology, honorary professor of medicine, and chief of cardiac clinic, University of Stockholm (Sweden), discuss "Circulatory Studies with Radioactive Isotopes" and Dr. Lawrence A. Kohn, Rochester, "Recent Trends in Cardiovascular Drug Therapy."

Meetings on Arthritis and Rheumatism.—The Medical Society of the County of Erie and the Buffalo chapter of the Arthritis and Rheumatism Foundation (of America) will present a program on arthritis and rheumatism, Oct. 26, 9 p. m., at the Hotel Statler, Buffalo. Speakers will be Gen. George C. Kenney, president of the foundation, and Dr. Russell L. Cecil, national medical director of the foundation, both from New York City. General Kenney's topic will be "The Development and Work of the Foundation" and Dr. Cecil's, "Most Recent Findings and Concepts in the Management of Arthritis and Rheumatoid Diseases." As a prelude to the joint meeting in the evening, exclusively for the profession, the Buffalo chapter plans to hold a clinical session in the New York room, from 3 to 5 p. m., designed in the main for representatives of organizations and groups allied with medicine or concerned in the broad problem of arthritis and rheumatism; physicians are also welcome. General Kenney will discuss "The Economic Aspects of Arthritis in Relation to the Impact on Industry" and Dr. Cecil, "The Latest Developments and Progress in Administration of Therapy to Arthritics." A panel of local physicians will lead the discussion and the question-and-answer period.

New York City

Hospital News.—Dr. Karl P. Klassen, professor of research surgery, Ohio State University College of Medicine, Columbus, will present "Pulmonary Biopsy" (motion picture) before the division of pulmonary diseases at Montefiore Hospital Oct. 26, at 2:30 p. m. in Binswanger Memorial lecture room.

Reiss Memorial Lecture.—The New York Institute of Clinical Oral Pathology announces the third Herman L. Reiss memorial lecture, to be held at the New York Academy of Medicine Oct. 25, 8:30 p. m. The essayist will be Raymond J. Nagle, D.M.D., dean, New York University College of Dentistry, who will lecture on the subject "Temporomandibular Function." Members of the medical, dental, and allied professions are cordially invited.

Lecture on Psychomotor Epilepsy.—Dr. Percival Bailey, professor of neurology and neurological surgery, University of Illinois College of Medicine, Chicago, will deliver the 1954 Charles A. Elsberg lecture Nov. 16, 8:30 p. m., at the New York Academy of Medicine, 2 E. 103rd St. Dr. Bailey will have as his subject "Psychomotor Epilepsy—Its Relation to the Visceral Brain." Preceding the lecture, a dinner in Dr. Bailey's honor will be held in the President's Gallery of the academy.

Graduate Fortnight.—The New York Academy of Medicine (2 E. 103 St.) will present the following evening lectures (8:30 p. m.) during the second week of its graduate fortnight:

Oct. 25, Current Status of the Development of Antimicrobial Agents, Gladys L. Hobby, Ph.D., Brooklyn, N. Y.
Complications of Antibiotic Therapy, Louis Weinstein, Boston.
Oct. 26, Hormones and Infection, Lewis Thomas, Minneapolis.
Staphylococcus Infection, Vernon Knight, Nashville, Tenn.
Oct. 27, Low Resistance to Infections: Relationship to Abnormalities in Gamma Globulin, David Gitlin, Boston.
Present Day Considerations of the Rabies Problem, Horace L. Hodes, New York.
Histoplasmosis, Chester W. Emmons, Ph.D., Bethesda, Md.
Oct. 28, Acute Diarrheal Diseases of Bacillary Origin, Francis S. Cheever, Pittsburgh.
Evaluation of Diagnostic Tests in Infection, Calderon Howe, New York.
Oct. 29, Approaches to the Chemotherapy of Viral Infections, Frank L. Horsfall Jr., New York.
Antibiotic Therapy of Viral and Rickettsial Diseases, Joseph E. Smadel, Washington, D. C.

The following morning panel meetings have been scheduled from 11 a. m. to 12:30 p. m.: Monday, "The Management of Regional Infections"; Wednesday, "Combined Medical and Surgical Treatment of Tuberculosis"; and Friday, "The Therapy of Amebiasis and Other Parasitic Infections."

OHIO

Postgraduate Courses.—On Oct. 27 and 28 the Frank E. Bunts Educational Institute, Cleveland Clinic, Cleveland, will offer a postgraduate course on diseases of the chest, under the sponsorship of the Cleveland Society for Diseases of the Chest and the American College of Chest Physicians. The registration fee is

$15, except for interns, residents, and members of the armed forces in uniform, who will be admitted free. A panel on emphysema is planned for Wednesday, 2 p. m., after which a panel discussion of pneumoconiosis will be presented. Thursday morning there will be a panel discussion, "Surgery in Mitral Stenosis." About 20 single-author presentations have been scheduled.

District Meeting in Akron.—The annual fall meeting of the sixth councilor district will be held in the Mayflower Hotel, Akron, Oct. 27. Out-of-state speakers include:

Louis M. Hellman, Brooklyn, N. Y.: Obstetrical Problems.
Sylvester J. O'Connor, Ann Arbor, Mich.: Conservative Management of Acute Shoulder Syndromes.
Reed M. Nesbit, Ann Arbor, Mich.: Bladder Obstructions of Childhood.
Francis C. Grant, Philadelphia, and Gilbert Horrax, Boston: The Neurosurgeon and the Herniated Disc.
William D. Robinson, Ann Arbor, Mich.; L. Maxwell Lockie and Bernard M. Norcross, Buffalo: Rheumatic Diseases.

Panel discussions and conferences will include a clinicopathological conference and "The Control of Pain," "Thyroid Diseases," "Problems Common to Arthritis and Orthopedics," "The Ischemic Kidney," and "Hemolytic Anemias" (lecture and panel).

OKLAHOMA

Oklahoma City Clinic.—The 24th annual fall conference of the Oklahoma City Clinical Society will be held Oct. 25 to 28. Lectures and discussions by 16 guest speakers and an address by Dr. Walter B. Martin, Norfolk, Va., President of the American Medical Association, are included in the four day postgraduate teaching program. All physicians who are members of a county medical society are invited to attend the clinic. The guests participating in the teaching program are Drs. George C. Adie, New Rochelle, N. Y.; Herbert S. Alden, Atlanta, Ga.; L. Henry Garland and Ralph Soto-Hall, San Francisco; Arnold S. Jackson and William S. Middleton, Madison, Wis.; William O. Johnson, Louisville, Ky.; Russell J. Blattner, Houston, Texas; William J. Dieckmann, Chicago; Lloyd G. Lewis, Washington, D. C.; John J. Modlin, Columbia, Mo.; James L. Poppen, Boston; William G. Sauer and Kinsey M. Simonton, Rochester, Minn.; David E. Smith, St. Louis; and Joseph F. Volker, D.D.S., Birmingham, Ala. Information may be obtained from the executive secretary, 503 Medical Arts Bldg., Oklahoma City.

PENNSYLVANIA

Society News.—The annual fall clinic of the Fayette County Medical Society will be conducted by Dr. William Thomas Foley, New York, at the Annette Nurses Home, Uniontown Hospital, on the afternoon of Oct. 27. A dinner meeting has also been arranged, after which a talk will be given on peripheral vascular diseases. Dr. Foley will present cases illustrating principles as they relate to peripheral vascular diseases, coronary insufficiency, cerebral insufficiency, and the current status of anticoagulant therapy.

Philadelphia

Phi Delta Epsilon Lecture.—Sigma chapter of Phi Delta Epsilon fraternity at the Temple University School of Medicine, Philadelphia, will hold the eighth annual lectureship, Oct. 27, at 4 p. m. in the medical school auditorium. The guest speaker, Dr. Harold G. Wolff, professor of medicine, Cornell University Medical College, New York, will discuss "Headache Mechanisms."

Seminar on Cardiology.—The Philadelphia Academy of General Practice announces its second annual seminar in postgraduate medicine at the Barclay Hotel, Rittenhouse Square at 18th Street, Oct. 27, 10:30 a. m. The topic, "Cardiology," will be developed by Drs. Harry Gold, New York ("Current Developments in the Management of Congestive Failure"); Joseph G. Benton, New York ("Rehabilitation of the Cardiac"); and Menard M. Gertler, Bethesda, Md. ("Coronary Artery Disease in Young Adults"). Admission to scientific session without charge; luncheon, $3.50.

Course in Medical History.—The section on medical history of the College of Physicians of Philadelphia is giving a course on medical history to the students of the medical colleges of Philadelphia. The course opened Oct. 18 with "The Meaning and Values of Medical History" by Richard H. Shryock, Ph.D., Baltimore. Dr. Owsei Temkin, Baltimore, will present "Classical Medicine," Oct. 25; "Renaissance Medicine," Nov. 1; and "17th and 18th Century Medicine," Nov. 8. On Nov. 15 Dr. Shryock will have as his subject "19th and 20th Century Medicine" and on Nov. 22, "Social Aspects of Medical History."

Meeting on Allergy.—At the fall meeting of the Philadelphia Allergy Society, Oct. 27 at the College of Physicians, Dr. Stanley F. Hampton, assistant professor of clinical medicine, Washington University School of Medicine, St. Louis, will present "Causes and Treatment of Intrinsic Bronchial Asthma," which will be discussed by Drs. Philip M. Gottlieb, Merle M. Miller, and Louis Tuft. Three original papers on allergy will be presented by Dr. Arthur G. Baker, Ridley Park; Dr. Charles S. Pennypacker, Bryn Mawr; and Dr. Elliott L. Goodman and Dr. Edmund E. Ehrlich, Philadelphia.

SOUTH CAROLINA

Surgeons Meet in Columbia.—The South Carolina chapter of the American College of Surgeons will meet at the Columbia Hotel in Columbia, Oct. 29 and 30. The meeting is not exclusively for the members of the college. Among the guest speakers will be Dr. John Adams, Boston; Dr. Bradley L. Coley, New York; Dr. William F. Rienhoff, Baltimore; and Dr. Alton Ochsner, New Orleans. There will be a banquet and dance Sunday evening. The scientific session will terminate Saturday noon in time for all to occupy a special section on the 50-yard line at the Carolina-Maryland football game. Reservations for football tickets and for the dining room should be made with Dr. John R. Timmons, 1401 Taylor St., Columbia, S. C.

WASHINGTON

General Practitioners Meet in Tacoma.—The annual convention and scientific assembly of the Washington Academy of General Practice will be held at the Winthrop Hotel, Tacoma, Oct. 29 and 30, under the presidency of Dr. Austin B. Kraabel, Seattle, who, with Dr. Jesse W. Read, Tacoma, president, Pierce County Medical Society, will welcome the attendants of the meeting. Dr. Herbert E. Schmitz, Chicago, will make the following presentations: "Indications of Hysterectomy," "Preinvasive Carcinoma of the Cervix," "Treatment of Radioresistant Cancer of the Cervix," and "Treatment of Cancer of the Uterine Fundus." Dr. Arnold S. Jackson, Madison, Wis., will discuss "The Acute Surgical Abdomen," "Diagnosis and Treatment of Diseases of the Thyroid," "Present Concepts in the Treatment of Hyperthyroidism," and "Tumors and Cysts of the Neck." All physicians and wives are invited to the banquet Friday, 7 p. m. (dress optional). The guest speaker, Dr. William B. Hildebrand, Menasha, Wis., president, American Academy of General Practice, will have as his topic "Medicine Looks at Its Problems."

WISCONSIN

Plan More State Health Conferences.—Because of the success of two recent school health conferences, the division on school health of the Commission on State Departments, State Medical Society of Wisconsin, has recommended four more such conferences, to be held at Stevens Point in October and Milwaukee in November, and the possibility of conferences in Superior and Whitewater in the spring or fall of 1955. Two previous conferences at Eau Claire and Oshkosh, April 7 and May 13, drew a total attendance of 457. The conferences featured addresses on the parent's concern with school health and on the integrated physical and emotional growth of children. Discussion groups, with parents, school personnel, nurses, and physicians taking part, considered control of disease, emotional problems of child growth, health examinations of pupils and school personnel, and health aspects of athletics. The regional conferences

on school health now being held at various centers in Wisconsin, an outgrowth of the statewide conference held at Madison in 1952, are an effort on the part of the state medical society to carry discussion of school health problems to the grass-roots level. Although the society is serving as sponsor of the conferences, excellent cooperation in the planning and conduct of the meetings is being received from the state departments of education and health and locally from the teachers' colleges, the parent-teacher associations, medical societies, school officials, and others.

GENERAL

National Rehabilitation Association.—The National Rehabilitation Association will hold its annual conference at the Lord Baltimore Hotel, Baltimore, Oct. 24 to 27. Physicians participating in the program include: Francis J. Borges, Jerome Hartz, Richard D. Hoover, James A. McCallum, James P. Miller, and Helen B. Taussig, Baltimore; Donald A. Covalt, New York; George H. Gehrmann, Wilmington, Del.; Robert L. Harding, Harrisburg, Pa.; Roy M. Hoover, Fisherville, Va.; and John A. Lewis Jr., Milton Meltzer, Winfred Overholser, and Howard M. Payne, Washington, D. C.

The Community Fund Campaign.—During the month of October the nationwide Community Fund campaign for funds is being waged. Among the health agencies aided by these funds are clinics, free hospital services, visiting nurse groups, infant welfare, maternity care, and homes for children and the aged. The Community Fund needs $30,000,000 in gifts this month from 1,900 cities in the United States and Canada to support these charities during 1955. Last year 69.2% of the medical profession responded nationally with an average gift of $60.91 to the Community Chest and Fund drive. In some cities—Pittsfield, Mass.; Cortland, N. Y.; and Hazelton, Pa.—the profession was represented 100% with still larger average gifts. October presents the opportunity to physicians again to help their fellow man.

Health of School Children Improves.—According to the Metropolitan Life Insurance Company, a study of prevailing mortality among school age children over the past 20 years shows a reduction in the death rate per 100,000 for boys from 158 to 57 and for girls from 126 to 37. In each sex, decreases of 85% or more were recorded over the 20 year period in the death rates for a number of diseases, including the principal communicable diseases of childhood, appendicitis, pneumonia and influenza, and tuberculosis. Despite this progress, there are still about 15,000 deaths annually among children at school ages in the general population of the United States, and a considerable part of the loss of life is amenable to control, according to the statisticians. Accidents are the greatest single menace to child life, accounting for more than two-fifths of the total mortality among boys and for more than one-fourth of the mortality among girls. Second in rank as a cause of death are the cancers, which 20 years ago were a minor cause of death at the school ages. The leukemias account for nearly half of all the deaths attributed to malignant disease among school-age children.

Winners of Plastic Surgery Scholarships.—The Foundation of the American Society of Plastic and Reconstructive Surgery, Inc., announces the following awards in its 1954 scholarship contest: first prize, "Ureteral Reconstruction with Splint Grafts: An Experimental Study," by Dr. Charles E. Horton, Durham, N. C.; second prize, "An Experimental Study of Polyvinyl Sponge as a Substitute for Bone," by Dr. Alfred M. Struthers, Rochester, Minn.; and honorable mention, "Roller and Wringer Injuries: Clinical and Experimental Studies," by Dr. Martin A. Entin, Montreal, Canada. The prize-winning papers will be presented at the foundation's day, Oct. 26, during the annual meeting of the American Society of Plastic and Reconstructive Surgery at the Hollywood Beach Hotel, Hollywood, Fla. Dr. Bengt Johanson, Stockholm, Sweden, will discuss the surgical treatment of urethral strictures, and Dr. Robert M. McCormack, Rochester, N. Y., last year's scholarship winner, will recount his recent experiences in plastic service centers abroad.

Meeting on Gastroenterology.—The 19th and last convention of the National Gastroenterological Association and the first annual convention of the American College of Gastroenterology, which became successor to the association (THE JOURNAL, Feb. 27, 1954, page 773), will be held at the Shoreham, Washington, D. C., Oct. 25 to 27, preceding a course in postgraduate gastroenterology, Oct. 28 to 30. The scientific sessions are open to all physicians without charge. Dr. Sigurd W. Johnsen, Passaic, N. J., president of the association, will preside at the Monday morning session and Dr. Lynn A. Ferguson, Grand Rapids, Mich., president of the college, at the Thursday morning session. A panel discussion on 25 years' observation of the gallbladder controversy will be presented Monday at 10:45 a. m., and an invited panel discussion on amebiasis will be held Monday afternoon. The president's annual reception at 8 p. m. will be sponsored by Winthrop-Stearns, Inc. (admission by card only). A symposium on esophageal varices is scheduled for Tuesday, 9 a. m. Luncheon, 12:30 p. m., will be sponsored by Burton, Parsons & Co. (admission by card only). Dr. George T. Pack, New York, has been invited as the speaker. The annual banquet will be held at 7 p. m. Tuesday. In all, 65 guests have been invited to participate in the presentations.

American Dietetic Association.—The annual meeting of the American Dietetic Association will be held at the Commercial Museum, Philadelphia, Oct. 26 to 29. At 2 p. m. Wednesday Drs. Paul Gyorgy, Philadelphia, and William J. McGanity, Nashville, Tenn., will talk on maternal and infant health, the former having as his topic "Trends and Advances in Infant Nutrition" and the latter, "Nutrition Implications of the Vanderbilt Cooperative Study." At the same hour Dr. Fredrick J. Stare, Boston, will moderate a discussion on non-nutritive sweeteners in which Dr. Robert M. Kark, Chicago, will participate. At 10 a. m. Thursday Dr. George H. Berryman, North Chicago, Ill., will talk on obesity and Dr. Jeremiah Stamler, Chicago, on recent progress in nutrition and hardening of the arteries, during a discussion entitled "Diet Therapy—1954." At 2 p. m. Dr. George Rosen, New York, will have as his subject "Nutrition in the History of Medicine," and Dr. Mark A. Hayes, New Haven, Conn., will present "The Dietetic Management of Postgastrectomy Dumping Syndrome." Other physicians participating in the program will include Anthony J. Rourke, New Rochelle, N. Y.; Samuel M. Wishik, Pittsburgh; George H. Gehrmann, Wilmington, Del.; George J. Gabuzda, Cleveland; and William H. Sebrell, Bethesda, Md.

Meeting of Chest Physicians.—A joint meeting of the Potomac and Virginia chapters of the American College of Chest Physicians at the Shoreham Hotel in Washington, D. C., Oct. 31, will open at 10 a. m. with a symposium on cardiac surgery. Dr. Edgar W. Davis, Washington, D. C., will be moderator for the following program:

Interatrial Septal Defects, Elton Watkins, Boston.
Surgery of the Aorta, Henry T. Bahnson, Baltimore.
Plastic Valves in Aortic Insufficiency, Charles A. Hufnagel, Washington, D. C.
Valvular Stenosis Surgery, Robert P. Glover, Philadelphia.

Dr. James J. Feffer, Washington, D. C., will be moderator at a round-table luncheon on pulmonary emphysema. The panel will be composed of Drs. Bruce W. Armstrong, Baltimore, and Milton Gusack and Paul F. Jaquet, Washington, D. C. A round-table luncheon at the same time, 12:30 p. m., which will be concerned with "Evaluation of Patients for Cardiac Surgery," will have as moderator Dr. Bernard J. Walsh, Washington, D. C., and as collaborators Dr. John O. Nestor, Washington, D. C., and Dr. Robert P. Glover, Philadelphia. At 2 p. m. Dr. Sol Katz, Washington, D. C., will moderate a discussion about "Problems Encountered in the Present-Day Management of Tuberculosis." The scientific program will be closed with a symposium on bronchogenic carcinoma, with Dr. Frank S. Ashburn, Washington, D. C., as moderator.

Fulbright Scholarships.—Fulbright scholarships for graduate study abroad are open to professional persons not now engaged in college or university study. Any United States citizen between the ages of 18 and 35 with a bachelor's degree is eligible for these foreign study awards. Applicants must be at the pre-

doctoral level. The closing date for applications for the 1955-1956 academic year is Nov. 1, 1954. Candidates-at-large may apply directly to the Institute of International Education, 1 E. 67th St., New York. Countries in which the Fulbright program operates are Australia, Austria, Belgium, Luxemburg, Burma, Ceylon, Denmark, Egypt, Finland, France, Germany, Greece, India, Italy, Japan, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, Sweden, the Union of South Africa, and the United Kingdom. Eligibility requirements for the Fulbright awards are: (1) United States citizenship; (2) a college degree or its equivalent at the time the award is taken up; (3) knowledge of the language of the country sufficient to carry on the proposed study; (4) age, 35 years or under; and (5) good health. Fulbright awards are made entirely in the currencies of participating countries abroad. The Fulbright Act authorizes the use of foreign currencies and credits acquired through the sale of surplus property abroad for educational exchange. The awards cover transportation, tuition, books, and maintenance for one academic year.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

Area	Sept. 25, 1954		Sept. 26, 1953, Total
	Paralytic Type	Total Cases Reported	
New England States			
Maine	3	7	18
New Hampshire	..	7	8
Vermont	1	2	9
Massachusetts	16	80	44
Rhode Island	..	7	28
Connecticut	5	24	26
Middle Atlantic States			
New York	64	161	250
New Jersey	32	58	43
Pennsylvania	..	82	96
East North Central States			
Ohio	53	190	175
Indiana	12	64	31
Illinois	49	172	119
Michigan	57	137	138
Wisconsin	21	54	69
West North Central States			
Minnesota	14	61	146
Iowa	34	104	20
Missouri	17	40	44
North Dakota	..	9	13
South Dakota	..	9	5
Nebraska	19	57	7
Kansas	19	56	24
South Atlantic States			
Delaware	1	2	2
Maryland	11	20	28
District of Columbia	1	3	2
Virginia	18	44	30
West Virginia	16	36	16
North Carolina	16	39	20
South Carolina	6	14	3
Georgia	4	29	15
Florida	47	86	25
East South Central States			
Kentucky	26	49	17
Tennessee	25	49	11
Alabama	2	4	11
Mississippi	..	11	7
West South Central States			
Arkansas	8	12	16
Louisiana	9	14	15
Oklahoma	6	20	9
Texas	40	87	37
Mountain States			
Montana	3	11	19
Idaho	..	16	7
Wyoming	9	23	2
Colorado	8	26	6
New Mexico	4	11	5
Arizona	3	16	18
Utah	..	25	3
Nevada	..	6	1
Pacific States			
Washington	10	29	20
Oregon	10	21	15
California	123	260	180
Territories and Possessions			
Alaska	8	18	2
Hawaii	3	3	2
Puerto Rico	..	..	2
Total	833	2,365	1,859

Anesthesiologists Meet in Cincinnati.—The American Society of Anesthesiologists will hold its annual meeting at the Netherland Plaza Hotel, Cincinnati, Oct. 25 to 29, under the presidency of Dr. Stevens J. Martin, Hartford, Conn. Monday morning will be devoted to a symposium on fundamental research and Monday afternoon to a symposium on general scientific anesthetic topics. A Dutch mix will be held Monday, 6 p. m., at the Restaurant Continental for members, wives, their guests, and exhibitors. The Tuesday morning symposium on pain will be followed by a panel luncheon, "Obstetrical Anesthesia," and an afternoon symposium on circulation. The Beverly Hills Nite-Life Party will be held Tuesday evening, as will the Pent-Skeller Stag parties, one in a penthouse and the other in a rathskeller. The following motion pictures on anesthesia will be shown throughout Wednesday:

Nitrous Oxide-Oxygen Anaesthesia in Dental Surgery.
Ether Analgesia.
Some Experiments on the Heart in Relation to Cardiac Arrest.
Anesthesia for Tonsillectomies in Children.
Regional Block Analgesia.
Post Anesthetic Rooms.

The topic of the Wednesday morning symposium is respiration and that of the Wednesday afternoon symposium, clinical research in anesthesia. A panel discussion, "Anesthesia and Public Relations," will be presented Wednesday noon by Mr. Alton Blakeslee, medical writer, Associated Press, New York; Mr. John O'Brien, president, Akron (Ohio) Better Business Bureau; and Mr. Donald Dunham, medical writer, Cleveland Press, with Dr. Brant B. Sankey, Cleveland, as moderator. Motorama, a tour of Cincinnati, has been planned Wednesday for wives and the guests of members. A cocktail party, 6:30 p. m. Wednesday, will precede the dinner dance, at which Dr. Torsten Gordh, Stockholm, Sweden, will be the guest speaker. The 1953 Distinguished Service award will be presented to Dr. Charles F. McCuskey, Los Angeles.

Multiple Sclerosis Grant.—Edward Pastore, a Ph.D. candidate in the field of biochemistry at the Boston University School of Medicine, has been awarded a fellowship for study in multiple sclerosis at the University of Naples, Italy, during the coming academic year. This grant is one of six awarded to American students this year by the government of Italy in cooperation with the Institute of International Education, 1 E. 67th St., New York, the organization responsible for the selection of contestants. Mr. Pastore will study free amino acids in the cerebrospinal fluid by means of paper chromatographic methods. This project has been conducted under a grant to the Boston University School of Medicine from the National Multiple Sclerosis Society. Mr. Pastore's award, in addition to free tuition at the University of Naples (about six months), includes a grant of 600,000 lire (about $970) plus a 10,000 lire allowance for travel within Italy. He will also receive $300 toward his round-trip fare from the Italian Embassy in Washington.

CANADA

Conference on Prepaid Medical Service Plans.—Dr. Elmer Hess, Erie, Pa., President-Elect of the American Medical Association, will address the Western Conference of Prepaid Medical Service Plans, which meets at the Empress Hotel in Victoria, B. C., Oct. 27 to 29. Dr. Hess, speaking on Friday, will describe the activities and values of the A. M. A. Council on Medical Service. Dr. Francis T. Hodges, San Francisco, chairman of the conference and president of the California Physicians' Service, will also address the meeting, as will Mr. Jerry Pettis, executive assistant to the president of the Los Angeles County Medical Society, who will discuss relationships of medical societies with prepaid medicine. Care of indigents on opposite sides of the border will be detailed by Drs. Frank A. Turnbull of Vancouver, B. C., and Quentin Kintner of Port Angeles, Wash.

CORRECTION

Correction in Education Number.—In the Education Number of THE JOURNAL, Sept. 11, 1954, page 159, in table 23, the total of "Other Graduate Students in Basic Medical Sciences" should be 2,293 rather than 2,243. The first number (Medical College of Alabama) of the vertical total column in the same table should be 444 rather than 394. These same errors are reflected in the grand total, which should be 59,480 instead of 59,430. This latter correction also applies to the "totals" column of table 24 and in all instances in which these numbers are used in the accompanying text.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1954 Clinical Meeting, Miami, Fla., Nov. 29-Dec. 2.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

NATIONAL MEDICAL PUBLIC RELATIONS CONFERENCE, McAllister Hotel, Miami, Fla., Nov. 28. Mr. Leo F. Brown, 535 North Dearborn St., Chicago 10, Director.

AMERICAN ACADEMY FOR CEREBRAL PALSY, Williamsburg Inn, Williamsburg, Va., Nov. 4-6. Dr. Harry E. Barnett, 116 South Michigan Blvd., Chicago 3, Secretary.

AMERICAN ACADEMY OF DENTAL MEDICINE, Hotel Statler, New York, Dec. 5. Dr. William M. Greenhut, 124 East 84th St., New York 28, Secretary.

AMERICAN ACADEMY OF DERMATOLOGY AND SYPHILOLOGY, Palmer House, Chicago, Dec. 4-9. Dr. J. E. Rauschkolb, P. O. Box 6565, Cleveland 1, Secretary.

AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY, Palmer House, Dec. 14. Dr. Paul Hodgkinson, 116 South Michigan Ave., Chicago 3, Secretary.

AMERICAN ASSOCIATION OF MEDICAL CLINICS, Jung Hotel, New Orleans, Nov. 12-14. Dr. Arthur H. Griep, 420 Cherry St., Evansville, Ind., Secretary.

AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA, Hotel Claridge, Atlantic City, N. J., Nov. 11-13. Dr James K. Stack, 700 North Michigan Blvd., Chicago 11, Secretary.

AMERICAN COLLEGE OF CARDIOLOGY, Interim Meeting, Algiers Hotel, Miami Beach, Fla., Nov. 11-13. Dr. Philip Reichert, 140 West 57th St., New York 19, Secretary.

AMERICAN COLLEGE OF GASTROENTEROLOGY, The Shoreham, Washington, D. C., Oct. 25-30. Dr. A. Xerxes Rossien, 33 West 60th St., New York 23, Secretary.

AMERICAN COLLEGE OF SURGEONS, Convention Hall, Atlantic City, N. J., Nov. 14-19. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Secretary.

AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY, Palmer House, Dec. 13-17. Dr. R. Gordon Douglas, 116 South Michigan Ave., Chicago 3, General Chairman.

AMERICAN DENTAL ASSOCIATION, Miami, Fla., Nov. 8-11. Dr. Harold Hillenbrand, 222 East Superior St., Chicago 11, General Secretary.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, Netherland-Plaza Hotel, Cincinnati, Oct. 25-30. Dr. J. Earl Remlinger Jr., 188 West Randolph St., Chicago 1, Secretary.

AMERICAN SOCIETY FOR THE STUDY OF ARTERIOSCLEROSIS, Sheraton Hotel, Chicago, Oct. 31-Nov. 1. Dr. O. J. Pollak, P. O. Box 228, Dover, Del., Secretary.

AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Hotel Peabody, Memphis, Tenn., Nov. 4-6. Dr. John E. Larsh Jr., Dept. of Parasitology, School of Public Health, Univ. of North Carolina, Chapel Hill, N. C., Secretary.

AMERICAN THERAPEUTIC SOCIETY, The Chase Hotel, St. Louis, Nov. 4-7. Dr. Oscar B. Hunter, 915 Nineteenth St. N. W., Washington, D. C., Secretary.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, Hotel Statler, Washington, D. C., Nov. 29-Dec. 1. Dr. Robert E. Bitner, Armed Forces Institute of Pathology, Washington 25, D. C., Secretary.

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICERS, Hotel Washington, Washington, D. C., Dec. 6-10. Dr. Franklin D. Yoder, State Board of Health, Cheyenne, Wyo., Secretary.

CALIFORNIA ACADEMY OF GENERAL PRACTICE, Statler Hotel, Los Angeles, Oct. 24-27. Mr. Wm. W. Rogers, 461 Market St., San Francisco 5, Executive Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH, Drake Hotel, Chicago, Oct. 29-30. Dr. Robert H. Ebert, 950 East 59th St., Chicago 37, Secretary.

CONFERENCE ON MYASTHENIA GRAVIS, University of Pennsylvania School of Medicine, Philadelphia, Dec. 8-9. Mrs. Agnes K. Peterson, 2 East 103rd St., New York 29, Executive Director.

CONGRESS OF NEUROLOGICAL SURGEONS, The Waldorf-Astoria, New York, Nov. 4-6. Dr. Bland W. Cannon, 1092 Madison Ave., Memphis, Tenn., Secretary.

DISTRICT OF COLUMBIA, MEDICAL SOCIETY OF THE, Hotel Shoreham, Washington, D. C., Nov. 1-3. Mr. Theodore Wiprud, 1718 M St. N. W., Washington, D. C., Secretary.

INDIANA STATE MEDICAL ASSOCIATION, Murat Temple, Indianapolis, Oct. 26-28. Mr. James A. Waggener, 23 East Ohio St., Indianapolis 4, Executive Secretary.

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, Mellon Institute, Pittsburgh, Nov. 17-18. Dr. C. Richard Walmer, Mellon Institute, Pittsburgh 13, Managing Director.

INTERSTATE POST GRADUATE MEDICAL ASSSOCIATION OF NORTH AMERICA, Municipal Auditorium, Minneapolis, Nov. 1-4. Dr. Erwin R Schmidt, 1300 University Ave., Madison 6, Wis., Secretary.

INTER-SOCIETY CYTOLOGY COUNCIL, Statler Hotel, Boston, Nov. 12-13. Dr. John B. Graham, 32 Fruit St., Boston, Chairman, Program Committee.

MEDICAL SOCIETY EXECUTIVE CONFERENCE, Everglades Hotel, Miami, Fla., Nov. 29. Mr. William H. Bartleson, 3036 Gillham Road, Kansas City 8, Mo., Secretary.

MIDWESTERN SECTION OF AMERICAN FEDERATION FOR CLINICAL RESEARCH, Thorne Hall Auditorium, Northwestern University Medical Campus, Chicago, Oct. 28. Dr. R. L. Grissom, Univ. of Nebraska College of Medicine, Dept. of Internal Medicine, Omaha 5, Secretary.

NATIONAL REHABILITATION ASSOCIATION, Baltimore, Oct. 24-27. Mr. E. B. Whitten, 514-16 Arlington Bldg., 1025 Vermont Ave., N.W., Washington, D. C., Executive Director.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, Statler Hotel, Boston, Nov. 3-5 Mr. Lawrence J. Linck, 11 South LaSalle St., Chicago 3, Executive Director.

OKLAHOMA CITY CLINICAL SOCIETY CONFERENCE, Oklahoma City, Oct. 25-28. Dr. Charles E. Leonard, 512 Medical Arts Bldg., Oklahoma City 2, Secretary.

OMAHA MID-WEST CLINICAL SOCIETY, Paxton Hotel, Omaha, Oct. 25-28. Dr. Louis E. Moon, 1031 Medical Arts Bldg., Omaha 2, Secretary.

POST-GRADUATE CLINIC, Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit, Nov. 10-11. Dr. F. P. Rhoades, 970 Maccabees Bldg., Detroit 2, Chairman.

PUERTO RICO MEDICAL ASSOCIATION, Santurce, Dec. 8-12. Dr. Luis R. Guzman-Lopez, Box 9111, Santurce, Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, Biltmore Hotel, Los Angeles, Dec. 5-10. Dr. Donald S. Childs, 713 East Genesee St., Syracuse 2, N. Y., Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:

Michigan, Grand Rapids, Dec. 4. Dr. H. Marvin Pollard, 1313 East Ann St., Ann Arbor, Governor.

New Jersey, Newark, Nov. 3. Dr. Edward C. Klein Jr., 6 South Kingman Rd., South Orange, N. J., Governor.

Western New York, Syracuse, Nov. 19. Dr. Edward C. Reifenstein, 109 South Warren St., Syracuse 2, Governor.

Western Pennsylvania, Pittsburgh, Oct. 27. Dr. Roy R. Snowden, 3509 Fifth Ave., Pittsburgh 13, Chairman.

SEABOARD MEDICAL ASSOCIATION, Hotel Cherry, Wilson, N. C., Nov. 14-16. Dr. James M. Habel Jr., 191 Bosley Ave., Suffolk, Va., Secretary.

SOUTHERN MEDICAL ASSOCIATION, St. Louis, Nov. 8-11. Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secretary.

SOUTHERN SOCIETY OF CANCER CYTOLOGY, St. Louis, Nov. 8-11. Dr. J. Ernest Ayre, 1155 N.W. 14th St., Miami, Fla., Secretary.

SOUTHERN SURGICAL ASSOCIATION, Hollywood Beach Hotel, Hollywood, Fla., Dec. 7-9. Dr. George G. Finney, 2947 St. Paul St., Baltimore 18, Secretary.

SOUTHWESTERN MEDICAL ASSOCIATION, Hotel Paso del Norte, El Paso, Texas, Nov. 17-19. Dr. Celso C. Stapp, 800 Montana St., El Paso, Texas, Secretary.

VIRGINIA, MEDICAL SOCIETY OF, Shoreham Hotel, Washington, D. C., Oct. 31-Nov. 3. Mr. Robert I. Howard, 1105 W. Franklin St., Richmond, Executive Secretary.

WESTERN SURGICAL ASSOCIATION, The Broadmoor, Colorado Springs, Colo., Dec. 2-4. Dr. Michael L. Mason, 154 East Erie St., Chicago 11, Secretary.

FOREIGN AND INTERNATIONAL

COMMONWEALTH HEALTH AND TUBERCULOSIS CONFERENCE, Royal Festival Hall, London, England, June 21-25, 1955. Mr. J. H. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1, England, Secretary General.

CONGRESS OF INTERNATIONAL ASSOCIATION OF APPLIED PSYCHOLOGY, London, England, July 18-23, 1955. Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England, President.

CONGRESS OF THE INTERNATIONAL DIABETES FEDERATION, Cambridge, England, July 4-8, 1955. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

EUROPEAN CONGRESS ON RHEUMATISM, Scheveningen, The Hague, Netherlands, June 13-17, 1955. Dr. H. van Swaay, Pieter Bothstraat 12, The Hague, Netherlands, Secretary.

HEALTH CONGRESS OF THE ROYAL SANITARY INSTITUTE, Bournemouth, England, April 26-29, 1955. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

INTER-AMERICAN CONGRESS OF RADIOLOGY, Shoreham Hotel, Washington D. C., U. S. A., April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St., Philadelphia 4, Pa., U. S. A., Secretary-General.

INTER-AMERICAN SESSION, AMERICAN COLLEGE OF SURGEONS, Universidad Mayor de San Marcos de Lima, Lima, Peru, S. A., Jan. 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

INTERNATIONAL ANATOMICAL CONGRESS, Paris, France, July 25-30, 1955. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6e, France, Secretary-General.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Brussels, Belgium, Aug. 1-6, 1955. Prof. C. Liebecq, 17 Place Delcour, Liege, Belgium, Secretary-General.

INTERNATIONAL CONGRESS OF COMPARATIVE PATHOLOGY, Lausanne, Switzerland, May 26-31, 1955. Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General.

INTERNATIONAL CONGRESS OF CRIMINOLOGY, London, England, Sept. 4-10, 1955. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Luxemburg, Luxemburg, Nov. 7-12, 1954. Colonel A. R. Vernengo, Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentina, S. A., Secretary-General.

INTERNATIONAL CONGRESS OF PLASTIC SURGERY, Stockholm, Sweden, Aug. 1-4, 1955, and Uppsala, Sweden, Aug. 5, 1955. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

INTERNATIONAL HOSPITAL CONGRESS, Lucerne, Switzerland, May 30-June 3, 1955. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

INTERNATIONAL SURGICAL CONGRESS, Geneva, Switzerland, May 23-26, 1955. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL SYMPOSIUM ON CARDIOVASCULAR SURGERY, Henry Ford Hospital, Detroit, Michigan, U.S.A., March 17-19, 1955. Dr. Conrad R. Lam, 2799 West Grand Boulevard, Detroit 2, Michigan, U.S.A., Chairman of Program Committee.

JAPAN MEDICAL CONGRESS, Kyoto University and Kyoto Prefectural Medical College, Kyoto, Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General.

LATIN AMERICAN CONGRESS OF PHYSICAL MEDICINE, Lima, Peru, S. A., Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N Y., U. S. A., Executive Director.

MIDDLE EAST MEDICAL ASSEMBLY, Campus of American University of Beirut, Beirut, Lebanon, April 22-24, 1955. Dr. John L. Wilson, American University of Beirut, Beirut, Lebanon, Chairman.

NATIONAL CONGRESS OF TUBERCULOSIS AND SILICOSIS, Mexico, D.F., Mexico, Jan. 23-29, 1955. Dr. Jose Nava Gonzalez, Balderas 32-312, Ap. Postal 7267, Mexico, D.F., Mexico, Secretary General.

NEURORADIOLOGIC SYMPOSIUM, London, England, Sept. 13-17, 1955. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

PAN-AMERICAN ACADEMY OF GENERAL PRACTICE, Lima, Peru, S. A., Feb. 11-25, 1955. Dr. Arturo Martinez, 54 East 72nd St., New York 21, N. Y., U. S. A., Secretary.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II in 1955.* Feb. 1-2, April 19-20 (Part II only), June 21-22, Sept. 6-7 (Part I only). Candidates may file applications at any time but the National Board must receive them at least six weeks before the date of the examination. New candidates should apply by formal registration; registered candidates should notify the board by letter and forward their fees. Exec. Sec., Dr. John B. Hubbard, 133 South 36th St., Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* July 15. Final date for filing applications is Jan. 15. *Oral.* Colorado Springs, March 27-31. New York City, Oct. 23-27. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* New Orleans, Feb. 1-4; Philadelphia, May 4-5; Washington, D. C., May 6-7; Portland, Ore., Sept. 14-16; Chicago, Nov. 30-Dec. 1. Exec. Sec., Dr. William A. Werrell, 1 West Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New Haven, November. Final date for filing application is Nov. 1. Sec., Dr. Leonard T. Furlow, 600 S. Kingshighway, St. Louis 10

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Part I.* Various centers, Feb. 4. *Part II,* Chicago, May 12-20. Deadline for receipt of applications is Oct. 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Practical examinations, 1954.* New York City, Dec. 5-9. *Written, 1955.* Various cities, Jan. 24-25. Final date for filing application was July 1, 1954. *Practical examinations, 1955.* Philadelphia, June 10-15; Chicago, Oct. 9-14. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPEDIC SURGERY: *Part I.* Various locations, spring. *Part II, Oral and Written.* Los Angeles, Jan. 26-28. Final date for filing applications for Part II was Aug. 15. Sec., Dr. Harold A. Sofield, 122 South Michigan Ave., Chicago 3, Illinois.

AMERICAN BOARD OF OTOLARYNGOLOGY: Richmond, Va., March 6-10, 1955. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PATHOLOGY: Miami, Nov. 29-30-Dec. 1. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

AMERICAN BOARD OF PEDIATRICS: *Oral.* New Haven, Dec. 3-5. Ex. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION: Philadelphia, June 5-6. The final date for filing applications is March 1. Sec., Dr. Earl C. Elkins, 30 N. Michigan Ave., Chicago 2.

AMERICAN BOARD OF PLASTIC SURGERY: May, 1955. Final date for filing case reports is Jan. 1. Corres. Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

AMERICAN BOARD OF PREVENTIVE MEDICINE: *Parts I and II.* Buffalo, Oct. 9-11. Final date for filing applications was July 15. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 13-14; New Orleans, Feb. 28-March 1, 1955; San Francisco, mid-October, 1955; New York City, December, 1955. Sec., Dr. David A. Boyd, 102-110 Second Ave. S.W., Rochester, Minnesota.

AMERICAN BOARD OF SURGERY: *Part I.* Oct. 26; March 30. *Part II.* Chicago, Oct. 18; New York City, Nov. 11-12; Kansas City, Kan., Dec. 13-14; New Orleans, Jan. 17-18; Baltimore, Feb. 14-15; Cincinnati, March 14-15; San Francisco, April 18-19; Boston, May 16-17; Philadelphia, June 13-14. Sec., Dr. John B. Flick, 225 S. Fifteenth St., Philadelphia 2.

THE BOARD OF THORACIC SURGERY: *Written.* February. Final date for filing applications is Jan. 1. Sec., Dr. Wm. M. Tuttle, 1151 Taylor Ave., Detroit 2.

DEATHS

McKendree, Charles Alphonso ⊕ New York City; born in Manchester, N. H., in 1886; Dartmouth Medical School, Hanover, N. H., 1910; instructor in neurology at Columbia University College of Physicians and Surgeons, later advancing to clinical professor of neurology, which position he held until 1948; formerly associate professor of neurology at the New York Post Graduate Medical School and Hospital; specialist certified by the American Board of Psychiatry and Neurology; member of the American Neurological Association, American Psychiatric Association, and the Association for Research in Nervous and Mental Disease; fellow of the American College of Physicians and the New York Academy of Medicine; past president of the New York Neurological Society; served during World War II; for many years attending neurologist at the Neurological Institute and the Vanderbilt Clinic; consulting neurologist, Roosevelt Hospital in New York, Goshen (N. Y.) Hospital, Greenwich (Conn.) Hospital, North Hudson Hospital in Weehawken, N. J., St. Luke's Hospital in Newburgh, N. Y., and the New Jersey Orthopaedic Hospital in Orange; author of "Neurological Examination"; died in Greenwich, Conn., Sept. 10, aged 67, of sarcomatosis.

Bogart, Arthur Henry De Blois ⊕ Brooklyn; born May 14, 1868; University of the City of New York Medical Department, 1893; an Associate Fellow of the American Medical Association; fellow of the American College of Surgeons, of which he was one of the founders; past president of the Kings County Medical Society; during the Spanish-American War served as a surgeon and held the rank of major in the 14th Regiment, New York National Guard; during World War I chairman of the Medical Advisory Board of Selective Service; during World War II chairman of the Selective Service Appeals Board; formerly chairman of the medical board and consulting surgeon at the Methodist Hospital, where he died Sept. 3, aged 86, of heart disease.

Miles, Walter Howard ⊕ Oklahoma City, Okla.; born in 1891; University of Oklahoma School of Medicine, Oklahoma City, 1918; assistant professor of preventive medicine and public health at his alma mater; specialist certified by the American Board of Preventive Medicine; member of the American Public Health Association; past president of the Oklahoma State Medical Association and the Oklahoma County Medical Society; served during World War II; director of the city health department; died in St. Anthony Hospital Aug. 31, aged 62, of acute myocardial infarction and hypertension.

Hibbitt, Charles William ⊕ Louisville, Ky.; Louisville Medical College, 1897; an Associate Fellow of the American Medical Association, serving as a member of the House of Delegates, 1933-1934; fellow of the American College of Surgeons; past vice-president of the Kentucky State Medical Association; professor emeritus of gynecology and obstetrics at the University of Louisville School of Medicine; veteran of Spanish-American War and World War I; affiliated with Kentucky Baptist Hospital, where he died Aug. 26, aged 83, of coronary thrombosis.

Adams, Edward Everett ⊕ Boston; Boston University School of Medicine, 1937; certified by the National Board of Medical Examiners; service with the U. S. Public Health Service terminated July 13, 1946; on the staff of the Faulkner Hospital, where he died Aug. 12, aged 43, of myocarditis.

Appelle, C. George ⊕ Champaign, Ill.; University of Illinois College of Medicine, Chicago, 1916; past president of the Champaign County Medical Society; fellow of the American College of Surgeons; served during World War I; on the staff of the Burnham City Hospital; died in the Carle Memorial Hospital in Urbana, Aug. 23, aged 70, of carcinoma of the mouth with metastases.

⊕ Indicates Member of the American Medical Association.

Belknap, Robert Willis ⊕ Damariscotta, Maine; Harvard Medical School, Boston, 1917; president of the Maine Medical Association and served as councilor for the Third District; past president of the Lincoln-Sagadahoc Counties Medical Society; at one time an officer in the regular navy; on the staff of the Miles Memorial Hospital; died Aug. 11, aged 63, of coronary occlusion.

Bethards, Paul Ernest ⊕ Toledo, Ohio; Toledo Medical College, 1900; died in the Toledo Hospital Aug. 26, aged 77, of leukemia.

Bonney, William Wesley ⊕ Perkasie, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1934; on the staffs of the Grand View Hospital in Sellersville, and the Quakertown Community Hospital, Quakertown; physician for the board of health of Perkasie; died Aug. 20, aged 49, of acute myocardial infarction.

Brannick, Catherine Elizabeth, Middleboro, Mass.; Tufts College Medical School, Boston, 1916; at one time examining physician for the Vocational Guidance Bureau of the Board of Education in Chicago, where she was associated with the Chicago Juvenile Court; died in St. Luke's Hospital Aug. 1, aged 76, of cerebral hemorrhage.

Burke, Emmett Stanley, Scranton, Pa.; Georgetown University School of Medicine, Washington, D. C., 1921; served during World War I; died in the Mercy Hospital Aug. 14, aged 58, of cerebral vascular accident.

Capowski, William Vladimir, Milton, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1937; certified by the National Board of Medical Examiners; affiliated with the Vassar Brothers Hospital in Poughkeepsie; died Aug. 4, aged 45, of coronary thrombosis.

Carnell, Fred Caldwell ⊕ Trezevant, Tenn.; University of Nashville Medical Department, 1909; chairman of the city school board; died Aug. 8, aged 78, of a ruptured appendix.

Clap, Edmund Wright ⊕ Norwich, Vt.; Harvard Medical School, Boston, 1898; member of the Massachusetts Medical Society and the New England Ophthalmological Society; served on the faculty of his alma mater; formerly practiced in Boston, where he was consultant in ophthalmology at the Massachusetts Eye and Ear Infirmary, and on the staff of the House of the Good Samaritan; died in Enfield, N. H., Aug. 4, aged 84, of coronary thrombosis.

Cohen, Harold Aaron, New York City; Columbia University College of Physicians and Surgeons, New York, 1910; served on the staffs of the Mount Sinai and Lying-In hospitals; died Sept. 3, aged 68, of heart disease.

Evans, James A., Augusta, Ga.; Meharry Medical College, Nashville, Tenn., 1915; served overseas during World War I; died Aug. 14, aged 63, of cerebral thrombosis, hypertension, and arteriosclerosis.

Falvello, Nicholas Antonio ⊕ Morristown, N. J.; Albany (N. Y.) Medical College, 1914; formerly affiliated with the Overlook Hospital in Summit, N. J.; died in Miami, Fla., Aug. 24, aged 69, of bleeding duodenal peptic ulcer.

Fitzpatrick, Dennis Francis ⊕ Iowa City, Iowa; State University of Iowa College of Medicine, Iowa City, 1901; city health officer; local surgeon for the Rock Island Lines Railway; on the staff of Mercy Hospital; died Aug. 26, aged 78, of heart failure.

Foster, Linus Joseph ⊕ Detroit; University of Michigan Medical School, Ann Arbor, 1920; professor of clinical neurology at the Wayne University College of Medicine; member of the Central Neuropsychiatric Association; past president of the Detroit Medical Club and the Michigan Society of Neurology and Psychiatry; attending neurologist at Harper and Receiving hospitals and on the staff of Highland Park General, Woman's, St. Joseph's, and Herman Kiefer hospitals; died in the Harper Hospital Aug. 10, aged 59, of cancer.

Garrett, Henry Grady ✠ Dallas, Texas; Baylor University College of Medicine, Dallas, 1919; member of the American Academy of General Practice; died June 28, aged 63, of myocardial infarction.

Gathings, Theodore Roosevelt ✠ New York City; Meharry Medical College, Nashville. Tenn., 1935; chief of clinics at the Bronx Hospital; died Aug. 13, aged 50.

Hammond, James Felton ✠ St. Paul; McGill University Faculty of Medicine, Montreal, Canada, 1906; served as instructor in obstetrics and gynecology at the University of Minnesota Medical School, Minneapolis; affiliated with Ancker, St. Luke's, and Miller hospitals; died Aug. 10, aged 72.

Hensen, Henry Mathies ✠ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1933; fellow of the American College of Physicians; served as major in the Medical Corps of the Officers Reserve Corps; on the staff of the Hospital for Women; accidentally drowned at Ocean City, Md., July 17, aged 50.

Jones, Donald Emerson ✠ Captain, U. S. Army, retired, Norvelt, Pa.; Western Reserve University School of Medicine, Cleveland, 1939; served during World War II; entered the Medical Corps, U. S. Army, in 1947 and retired March 31, 1949, for disability in line of duty; died in August, aged 39.

Lilga, Harris Vincent ✠ Petoskey, Mich.; University of Nebraska College of Medicine, Omaha, 1935; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served in the Pacific theater during World War II; attached to the Burns Clinic; accidentally drowned on Walloon Lake Aug. 10, aged 44.

Maddox, David Campbell, Rives, Tenn.; Vanderbilt University School of Medicine, Nashville, 1907; died Aug. 4, aged 74, of coronary thrombosis.

Morton, Heber Jones ✠ Stuarts Draft, Va.; University of Georgia Medical Department, Augusta, 1909; past president of the Augusta County Medical Society; served in France during World War I; died in the Memorial Hospital, New York City, Aug. 10, aged 69.

Neville, Lester ✠ Dillard, Ga.; Atlanta School of Medicine, 1911; on the staff of the Rabun County Maternity Hospital in Clayton, where he was chairman of the county board of health; died July 2, aged 70, of heart failure.

Niemann, Arthur Christian, Milwaukee; Milwaukee Medical College, 1908; died in Malta, Mont., June 21, aged 67, of cerebral hemorrhage.

Pontery, Herbert B. ✠ Jersey City, N. J.; Eclectic Medical College, Cincinnati, 1924; shot and killed Aug. 7, aged 59.

Pruitt, Elihu Posey ✠ Birmingham, Ala.; Atlanta College of Physicians and Surgeons, 1905; formerly medical director of the Alabama State Prison and physician in charge of the Kilby Prison; on the staff of the South Highlands Infirmary; died in the Hillcrest Sanitarium recently, aged 76, of arteriosclerotic heart disease.

Ramirez, Jorge Guillermo, Washington, D. C.; Georgetown University School of Medicine, Washington, 1934; formerly minister of labor, public health, and social welfare in Panama; died in the Georgetown University Hospital Aug. 3, aged 43.

Roberts, Robert Almer ✠ San Antonio, Texas; Southern Methodist University Medical Department, Dallas, 1911; member of the American Academy of General Practice; died June 12, aged 69.

Rotnem, Orville Morris ✠ Minneapolis; University of Minnesota Medical School, Minneapolis, 1944; formerly a resident at the University Hospitals in Iowa City; died in St. Mary's Hospital, Rochester, Minn., July 25, aged 35, of injuries received in an automobile accident.

Roughan, Charles Michael ✠ Lowell, Mass.; Tufts College Medical School, Boston, 1906; past president of the Middlesex North District Medical Society; served as school physician; affiliated with St. John's Hospital; died July 11, aged 74, of cerebral hemorrhage and arteriosclerosis.

Salerni, Nicola B., Indianapolis; Loyola University School of Medicine, Chicago, 1918; died in the Logansport State Hospital in Logansport June 15, aged 69, of myocardial infarction.

Sharp, Jack Weston, Dallas, Texas; Baylor University College of Medicine, Dallas, 1939; formerly field consultant for the state health department; at one time medical director of the Riverside Hospital in Waco; on the staff of St. Paul's Hospital; died July 27, aged 38.

Shoemyen, Ernest, New Britain, Conn.; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1919; died Aug. 13, aged 58, of tuberculosis.

Skrzycki, Stephen Stanislaus ✠ Hamtramck, Mich.; Temple University School of Medicine, Philadelphia, 1917; fellow of the American College of Surgeons; mayor of the city of Hamtramck for five consecutive terms from 1942 to 1952; member of the staff of St. Francis Hospital in Hamtramck since its founding; died in the Harper Hospital in Detroit, Aug. 5, aged 61, of carcinoma of the tonsil.

Snell, Frank H., Lansing, Mich.; Chicago Homeopathic Medical College, 1896; died Aug. 13, aged 87, of arteriosclerosis.

Summers, Edmund ✠ Mattoon, Ill.; Kentucky School of Medicine, Louisville, 1898; died Aug. 7, aged 82.

Taylor, Lewis, Greenfield, Mass.; Middlesex College of Medicine and Surgery, Cambridge, 1926; affiliated with the Franklin County Public Hospital, Greenfield, and the Farren Memorial Hospital in Montague City, where he died Aug. 12, aged 68, of coronary thrombosis.

Wilson, Walter John Sr. ✠ Detroit; Detroit College of Medicine, 1897; emeritus professor of clinical medicine at Wayne University College of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the House of Delegates of the American Medical Association in 1919, 1921, and 1922; consultant in medicine at St. Mary's Hospital, where he was past president of the medical staff and a member of its executive staff; died July 18, aged 78.

Wolfson, Victor Hugo ✠ Mount Clemens, Mich.; Detroit College of Medicine, 1909; physician and surgeon for the Michigan State Police and Macomb County Sheriff's Department; on the staff of the Grace Hospital, where he died Aug. 15, aged 68, of carcinoma of the pancreas.

Wood, Harold Barrett ✠ Wind Ridge, Pa.; University of Pittsburgh School of Medicine, 1910; affiliated with Greene County Memorial Hospital in Waynesburg; died Aug. 14, aged 70, of coronary occlusion.

Young, Richard Claude ✠ Arkansas City, Kan.; Keokuk (Iowa) Medical College, 1898; for many years member of the board of education; at one time mayor of Chase; died in Sand Springs, Okla., Sept. 4, aged 79, of coronary occlusion.

Zetena, Dominick Francis ✠ New York City; University and Bellevue Hospital Medical College, New York City, 1924; fellow of the American College of Surgeons; affiliated with St. Vincent's, Parkway, and Harlem hospitals; died Aug. 26, aged 57, of coronary thrombosis.

DIED WHILE IN MILITARY SERVICE

Brewster, Richard Ellsworth, Lieut. (j.g.) U. S. Navy, Norfolk, Va.; University of Kansas School of Medicine, Kansas City, Kan., 1952; appointed a lieutenant (j.g.), Medical Corps, U. S. Naval Reserve, in 1952; transferred to the medical corps of the regular navy in 1953; awaiting transfer to the Naval Hospital, National Naval Medical Center, Bethesda, Md., for residency training at the time of his death; died in the Naval Hospital, Portsmouth, Aug. 22, aged 26, of acute anterior bulbar poliomyelitis.

FOREIGN LETTERS

AUSTRIA

Poisoning with Insecticide.—At the meeting of the Society of Physicians in Vienna on June 11, F. X. Mayer reported on poisoning with parathion (E605). Diethyl-*p*-nitrophenyl-thiophosphoric acid ester (diethylester) and the corresponding dimethyl ester are the active ingredients of the insecticides derived from thiophosphoric acid ester. The first of these two, present in parathion in concentrations up to 50%, is a brown oily liquid with a characteristic garlic-like odor and a boiling point of 174 C. The second substance, present in concentrations up to 2% in the spray preparations, is well crystallized, with a melting point of 33.5 C. The lethal dose for rats on internal administration is 6.4 mg. of the diethyl ester and 15 to 20 mg. of the dimethyl ester per kilogram of body weight. In man about the same proportions may be lethal. From 1 to 2 cc. of the concentrate taken by mouth may cause death.

Autopsy does not reveal any anatomic changes characteristic of poisoning. Mild hyperemia of the gastric mucosa and mild pulmonary edema are observed. Occasionally a garlic-like odor of the cadaver is noted, but this may also be caused by the ingestion of food spiced with garlic. The presence of such an insecticide, however, may be indicated by the simultaneous death of large numbers of flies, which is frequently observed in the course of autopsy. These esters may be condensed up to 70% from acidulated gastric contents or blood by steam distillation without decomposing. The esters may then be shown in the distillate by chemical means. Differentiation between an intoxication by the diethyl or dimethyl ester may be made by measuring the absorption of infrared light. The poison does not undergo chemical change in the body.

Dr. V. Lachnit had observed poisoning produced by thiophosphoric acid as an occupational hazard. The first symptoms of the so-called chronic poisoning consist of an increased secretion of the salivary and sweat glands and the presence of miosis. Gastrointestinal symptoms owing to the increased tonus in the gastrointestinal tract may occur later. An early symptom in some patients was a mild nausea produced by smoking. Medical prophylaxis consists of the determination of plasma cholinesterase activity in the persons exposed to the risk of poisoning, since this activity will be reduced by the increased taking up of alkyl phosphates. Unfortunately this determination is difficult.

ENGLAND

Declining Tuberculosis Mortality.—An editorial in the *British Medical Journal* of Aug. 14, 1954, draws attention to the reduction of deaths from tuberculosis and is based on studies in London by Benjamin and in Glasgow by Stein that show that the death rate in 1950 of men in unskilled occupations and of their wives still remained twice as high as for those in professional occupations. No great changes of mortality from tuberculosis occurred in Britain between the end of the Stuart period and the beginning of the 19th century, and in London about one death in five was due to this disease. About the middle of the century, when it was established that the disease was due to a specific infective agent, deaths in England and Wales averaged 65,000 per year in a population of less than 20 million. Since then, apart from temporary setbacks during the two world wars, improvement has been continuous, and by 1948, with the population more than doubled, deaths from tuberculosis numbered only 22,000. Some of the credit from this great decline can be attributed to treatment and some to the isolation of infectious patients, but the main factors have been improvement in nutrition, housing, and working conditions.

The items in these letters are contributed by regular correspondents in the various foreign countries.

Since 1948, treatment with streptomycin, *p*-aminosalicylic acid, and derivatives of isonicotinic acid has converted the long and steady retreat of tuberculosis deaths to a steady rout, and in 1953 deaths in England and Wales numbered only 9,000. In Scotland, where mortality continued high for some years after World War II, similar improvement has now occurred, and Ruys, McDonald, and Springett have shown that this experience has been shared throughout Western Europe. The degree of improvement has been remarkably uniform, and in many countries only two-thirds as many people died from tuberculosis in 1952 as in 1950. In England and Wales the death rate per 100,000 fell from 37 to 24; in Scotland from 54 to 31; in Northern Ireland from 48 to 30; in the Irish Republic from 78 to 54; and even in Portugal, outstanding for its high mortality, the rate fell from 142 to 96. The death rate in the United States during the same period declined from 27 to 16.

The sex-age pattern of mortality in England and Wales presents a number of unexplained features. In women, the highest rates are among young adults and have remained so for many years. In men the highest rates a century ago were in young adults, but since then there has been a gradual advance in the peak age, which is now about 60. This has revived interest in the "cohort" method of studying tuberculosis mortality rates, and Springett has suggested that the high death rates of older men derive less from contemporary circumstances than from the adverse conditions that affected this cohort of men when they were young. Another departure from the conventional approach has been adopted by Logan and Benjamin in the concept of mortality measured not in numbers of deaths but in numbers of potential years of life lost. In 1952 tuberculosis accounted for 2.1% of all deaths but for 5.7% of years of working life lost.

Though mortality has been declining there has been no corresponding diminution in numbers of new cases of tuberculosis reported. The lowest annual total of reported cases was 46,000 in 1939. This rose to 51,000 in 1941 and was 48,000 in 1952. It is believed that these high rates are the result of more effective and earlier case finding; but with the numbers of tuberculosis survivors now increasing so fast year by year the possibility cannot be ignored that the proportion of potential disseminators of infection may be rising despite the fact that in many cases the sputum becomes free of tubercle bacilli under chemotherapy.

Medical Responsibility.—The *British Medical Journal* of July 31 in reviewing a recent Scottish court case stated that the doctrine that a physician is solely responsible for the patient in his charge seems not only self-evident but fundamental to good medicine. It matters not whether the physician is employed by a hospital, a local authority or an industrial concern; he recognizes that when patients are under his care his duty is to those patients, not to his employer, and that the relationship between physician and patient is a personal one that admits of no third party intruding except in consultation. Now, by a decision of the first division of the Court of Sessions in Scotland, boards of management of Health Service hospitals are made vicariously responsible for the negligence of resident members of medical staffs in the performance of their professional duties. The court had two cases of alleged negligence by resident physicians, and the hospital boards had been sued for damages as well as the physicians. The hospital authorities had previously been absolved in the lower courts from vicarious responsibility. Delivering the present judgment (with which his two colleagues on the bench concurred), Lord Cooper posed these crucial questions: "Are medical personnel in a class apart from all other skilled persons? Is a distinction to be drawn between skilled persons who belong to a 'profession' and those who do not?"

Lord Cooper did not give a direct answer to them, but the argument that he developed will not evoke much sympathy among medical men. The essence of the matter, he said, was that those physicians were full-time salaried employees pro-

hibited from private practice, normally resident on the hospital premises, and subject to a measure of disciplinary control. They were subject now, he continued, as in the past, "in the exercise of their professional judgment and skill only to the supervision and the direction of the medical hierarchy under whom they were assigned duties." Lord Cooper then turned to the relationship between the hospitals and the patients created by the Health Service Act and concluded that the older Scottish decisions were outmoded. He dwelt in his judgment on a new obligation of the state to treat the patient and not merely to make arrangements for his treatment. To physicians the meaning of these words must be difficult to interpret, for how can the state treat patients? The real answer to Lord Cooper's questions is that physicians are indeed different from other skilled persons in that they are personally responsible for the health and life of the patients in their care, and neither the state nor any other employer can take over that responsibility without damaging the patient's interests.

The Guillebaud Committee and the Health Officers.—The Guillebaud Committee was set up by the Minister of Health to suggest economies in the operation of the National Health Service without undermining its usefulness. A memorandum from the Society of Medical Officers of Health has been published in *Public Health* for August, 1954. Many of the recommendations suggest that if they are adopted, they would result in economy, though it is not always easy to see how this will be achieved just by switching the administration of some of the services from one authority to another. According to the memorandum the cost of the National Health Service is bound to rise, particularly on the hospital side, unless steps are taken to unify the service and to change it from being primarily a service for the relief of sickness to a real health service. Before great changes in the organization of the health services are made, a decision should be reached on what is likely to be the best form of administration. All changes should then be made in the direction of this ideal. There should be a complete reorganization of the health services to provide a unified local administration of all three sections under elected representative bodies. Since this would require reorganization of the local government, it is unlikely to be achieved in the near future.

The duties of the Ministry of Health should be advisory and supervisory and not executive. Simplification of administration of the hospital services could save money, and some of the saving should be used to finance public health measures that would lead in turn to further savings by reducing the need for therapeutic services. Thus a cycle of efficiency, progress, and economy would be substituted for the present vicious circle of overlapping administration and ever-increasing cost. Many patients with chronic illness could be nursed at home if the relatives were given adequate help, and the extended provision of home nurses and home helps by local health authorities would obviate the need for some of the beds used at present. This would result in a reduction in the number of beds. Social welfare departments are redundant, and efficiency and economy could be achieved by placing all welfare administration in the hands of local health officers. This arrangement has been made in many areas and is said to operate satisfactorily. Children's departments could likewise be absorbed by public health departments.

Voluntary Contributions to Hospitals.—The *British Medical Journal* for Aug. 21 comments on the continued usefulness of King Edward's Hospital Fund for London. The establishment of the National Health Service has done much to reduce voluntary contributions. King Edward's Hospital Fund for London now derives only one-tenth of its ordinary income from subscriptions and donations; nine-tenths is income from investments that are a legacy of former benevolence dating back to Edwardian times. The fund has never aimed at a high subscription income, having refrained from active competition with hospitals in the search for subscribers; but, although a number of staunch supporters, headed by the Queen, still maintain their subscriptions, the list has diminished materially. The voluntary spirit is not easily extinguished, however, and the report of the fund for 1953 shows a notable upswing in donations.

Grants have been made by the fund during the past year to a number of improvement schemes, from $33,800 for the rehabilitation of one floor of the geriatric unit at West Middlesex Hospital to $140 for putting in a new gas stove at a convalescent home in Broadstairs. The projects have included such things as a new cerebral palsy center at a children's hospital, the renovation of a villa for a nurse-training school, and the provision of such features as gardens, verandas, radios, and diet kitchens at many other places. One of the special activities of the fund is the running of London's well-known emergency bed service. The fund also supports convalescent and recovery homes, many of which would be closed were it not for its aid. It encourages nurse recruitment and training. Its catering service is one of its most useful activities and includes the planning of kitchens, advice on food preparation, investigation of food costs, and arrangement of courses for catering officers. Of the 12 homes for the aged sick to be set up under a scheme inaugurated in 1949, the 10th is being opened this year.

Care for Aged.—Family loyalty is as strong as ever in the welfare state according to "Over Seventy," a survey of 100 persons over 70 years of age living in Hammersmith, published by the National Council of Social Service. Older persons are not neglected by their children and other relatives. Daughters help daily with cooking and washing; sons call regularly after work; and nephews, nieces, and neighbors assist. The chairman of the National Old People's Welfare Committee said: "The greatest single hardship suffered by the old is loneliness." Of the older persons interviewed, 62 were in close touch with their families, 18 had no family living, 2 had no knowledge of their family, and 4 no contact. Many more would like visitors. "Not even the vicar calls now," said one. The lack of parochial visiting was mentioned by several. Budgets disclosed that nothing was available for luxuries. Some of the older persons keep on smoking by eating less. The need of a pipe is felt less keenly by a man who has a wife to lessen his loneliness. Beer is considered less important than tobacco.

The aged persons wish that life could be a little easier, but they accept their lot cheerfully. Reading is their favorite occupation. A man of 82, who could read better by electric light, dozes during the day and stays up till 2 or 3 a. m. to read. More would like to listen to the radio, the second most popular diversion, but cannot afford a set. Many persons kept pets, preferring their companionship to the extra food for themselves that money spent on the pets could buy.

Sulfur Chief Cause of Fog Deaths.—Atmospheric pollution, mainly by oxides of sulfur, caused the death of nearly 4,000 people in the fog of December, 1952, according to a Ministry of Health report. The fog blanketed London for four days. While the available evidence does not incriminate any one constituent of the fog, it was concluded that the excessive mortality and increased incidence of respiratory illness during and immediately after the fog were the result of irritation of the respiratory tract by contaminants of the fog, probably those derived from the combustion of coal and its products. The smog took its greatest toll among persons already suffering from chronic respiratory or cardiovascular disorders. Of those who died, 90% were over 45 years of age, and about 65% were over 65. Deaths from bronchitis rose in one week from 76 to 704. There was a marked increase in sudden deaths. A high proportion of persons who died were found dead in bed. This report stresses the increase in sulfur dioxide in the atmosphere during the fog. Its harmful effects were probably reinforced by sulfur trioxide dissolved as sulfuric acid in fog droplets. To most normally healthy persons the fog was little more than a nuisance. There was nothing to suggest that it produced a new clinical or pathological entity.

Rules for Clean Food.—A 46 point "Caterers' Charter" for cleaner food handling has been sent by the National Caterers' Federation to the Minister of Food, with the suggestion that its provisions should be made legally enforceable. The charter is the federation's answer to its critics in the House of Commons. During the second reading of the Food and Drugs (Amendment) Bill it was said that trade interests were concerned with protecting dirty cafes. The proposals include: 1.

All persons handling food should possess a personal hygiene certificate issued by a health officer and renewed every three months. 2. Washing facilities in catering establishments should include hot water containing a "correct dosage" of sterilizing agent or detergent. 3. Unhygienic habits, such as blowing into paper bags or licking fingers and smoking or snuff-taking while handling food, should be prohibited. 4. Local authorities should be responsible for enforcing the regulations. 5. Clean food committees, representing the local authority, the catering trade, and consumers, should have powers of arbitration. 6. A national publicity committee on hygiene should be set up by the Minister of Food.

Legal Status of Surgeon's Health.—A woman who alleged that a thyroidectomy was performed on her in 1944 by a surgeon who was unfit for the task because he was suffering from cancer of the lung claimed damages against the Ministry of Health. She claimed that the operation had left her apathetic and unable to bear children and that her voice had become a mixture between high pitched and husky. At operation, both her recurrent laryngeal nerves were cut or damaged. Subsequently, she had persistent difficulty in breathing that was so severe that some years later when she was pregnant, to avoid risk of life, she was advised to have the pregnancy terminated and to be sterilized. The surgeon died soon after performing the operation, but at the time of operation he knew that he had cancer of the lung. The Ministry, in defense, denied negligence or lack of skill or that the surgeon was a servant of the hospital. The patient's counsel argued that the deep x-ray therapy the surgeon had taken had made him ill but the Ministry said that the state of the surgeon's health did not detract from his professional skill and fitness to perform the operation. The judge upheld the Ministry.

Lethal Fumes from Jam.—Carbon monoxide poisoning caused by charring jam was the unusual cause of death in a case that came before the coroner. A spinster, aged 65, was found lying dead on the kitchen floor of her house by the police. The room was full of fumes, and on one of the lighted gas burners stood a large bowl covered by a wooden lid. The bowl had contained jam, but it had boiled over and burned dry. The autopsy showed that the woman had inhaled a large amount of carbon monoxide and that this was the immediate cause of her death. The appearance suggested also that she might have had a coronary occlusion causing her to lose consciousness. Tests by the assistant chief physicist to the South-eastern Gas Board showed that carbon monoxide was rapidly produced by carbonizing sugar, with the production of a lethal atmosphere. Returning a verdict of accidental death, the coroner emphasized that there was no risk of carbon monoxide being produced in this way in the normal process of jam making, but only when it went to the point of charring.

The Common Cold.—There is hope of discovering a cure for the common cold according to a report of the Medical Research Council for 1952-1953 published in August. The finding of the Common Cold Research Unit, Salisbury, that the virus could be cultivated in human embryonic lung tissue was an encouraging advance. Should they now find a way of detecting activity of the virus in the cultures by some laboratory test not requiring the use of volunteers the way would be open for bringing this infection into the category of those amenable to attack in the laboratory. The report states that, since infections due to bacteria are now controlled and cured by sulfonamides and antibiotics, the attack on disease has been switched to measures against the viruses.

Death of Sir Stanley Hewett.—Sir Stanley Hewett, who died at the age of 74, was for more than 40 years a medical adviser to the royal family. During the long illness of King George V in 1928 he was in constant attendance. In 1936 he was a signatory of the bulletin announcing the King's death. He was in charge of the operation for appendicitis on the Princess Royal in 1953. Educated at Cambridge, he held various appointments at St. Thomas Hospital and West London Hospital and was knighted in 1921.

FRANCE

Causes of Death in 1952-1953.—According to the publications of the National Institute of Statistics, the general mortality has decreased greatly since 1946. The average rate was about 12.5 per 1,000 inhabitants in 1952-1953. Tuberculosis caused 18,637 deaths in 1952 against 15,437 in 1953. At the beginning of the 20th century the annual number of deaths was close to 100,000. Infectious diseases caused 7,740 deaths in 1952 against 8,046 in 1953. This increase was due to influenza. Malignant tumors caused 74,478 deaths in 1952 against 72,915 in 1953; here the death rate in women was higher than that in men. Deaths from nonmalignant tumors are increasing; 4,022 in 1952 against 4,444 in 1953. Those from leukemia are also increasing; 1,879 in 1952 against 2,034 in 1953. Deaths from alcoholism increased from 2,832 in 1952 to 3,748 in 1953. Those from diabetes increased from 4,852 in 1952 to 4,861 in 1953. The deaths caused by intracranial vascular lesions have increased from 59,528 in 1952 to 60,911 in 1953. Deaths from heart diseases increased from 88,953 in 1952 to 94,488 in 1953; those from diseases of the digestive tract increased from 24,196 in 1952 to 25,714 in 1953. This was largely due to an increase in deaths from cirrhosis of the liver. Deaths from nephritis decreased from 7,384 in 1952 to 5,726 in 1953. Suicides decreased from 6,542 in 1952 to 6,362 in 1953.

In 1953 there were 38 deaths of babies less than one year old per 1,000 live births. A century ago the rate was 200. France holds 16th place in the international statistics for mortality of premature infants. This mortality varies with social level, the conditions of the sanitary system, and the adequacy of housing. In the years 1950 and 1951, for instance, this rate was 16 per 1,000 for the legitimate children of the dentists, 17 for those of chemists, 21 for those of physicians, 23 for those of professors, 26 for those of teachers, 59 for those of woodcutters, 74 for those of unskilled laborers, and 80 for those of miners.

Pharmacology and Old Age.—In the *Le concours medical* of June 12, 1954, H. Destem reported on the effects of drugs on older persons, the functional power of whose tissues is altered because of the changes in the capillaries, which set up the degenerative change of the intercellular medium. Consequently, the elimination of the therapeutic substance is delayed and those products are more easily accumulated than in younger patients. This should be taken into account in determining the proper doses. The author also suggests that blood transfusions should be given slowly in older patients because their bodies are ill-adapted not only to massive losses of liquids but also to massive accretions. Acquired immunity to infection remains until extreme old age. Antibiotics are quite effective in older persons, but sulfonamides are not to be administered beyond the age of 70. Though in general hormone therapy does not produce any real rejuvenation of older persons, cortisone, corticotropin (ACTH), and the sex hormones give some satisfactory results. The addition of the vitamins B_{12}, B_1, and the pellagra-preventive (P.-P.) factor to the diet is often necessary because of deficiencies owing to a bad detention.

Antibiotic-Resistant Germs.—Clinicians and laboratories often disagree as to the resistance of germs to antibiotics. The researchers think this is due to the fact that the organisms sent to the laboratory for examination come from the pus and the blood where they are already altered. R. Mayou has reported in *La semaine des hôpitaux de Paris* for June 21, 1954, his observations on organisms in the tissue in which they are acting. He has studied bacteria from the pus, blood, and diseased tissues of patients with mastoiditis. Of 31 patients examined, the resistance to antibiotics was similar regardless of the source of the organism in 10, slightly different in 11, and markedly different in 10. Experiments on rabbits showed that the resistance of germs taken at the same time from the same animal varies according to whether the culture has been made from the blood, pus, or the tissues. The resistance of the germs in the blood is little altered. Unfortunately, the study of the resistance of germs in the tissue is interesting but particularly difficult. The author concludes that more surgical biopsies of the infected tissues should be made.

CORRESPONDENCE

INTERFERENCE WITH RADIOACTIVE IODINE UPTAKE TEST

To the Editor:—With the increased use of radioactive iodine in the diagnosis of thyroid disorders, it becomes important that those drugs that influence the iodine uptake by the thyroid gland be recognized. To the vast number of iodine-containing substances that affect this test, the name of another—benzylpenicillin-β-diethylaminoester hydriodide (Neo-Penil; Smith, Kline and French Laboratories)—should be added. The following brief case report illustrates its action.

A 50-year-old woman was admitted to the Harrisburg Polyclinic Hospital on March 7, 1954, with a chief complaint of right chest pain, chills, fever, muscular aches, and nonproductive cough. She had a temperature of 99.8 F, respirations 28 per minute, and pulse 80 per minute. Physical findings of a pneumonitis in the right side were elicited and subsequently confirmed by roentgenogram. Treatment was begun with procaine penicillin. On March 10 this was cancelled and Neo-Penil, 300,000 units twice daily, begun and continued until discharge on March 19. The clinical course was satisfactory, and the patient was discharged without symptoms. In an effort to establish the range of normal uptake for this laboratory, it is the practice of the radioisotopes department to request from the resident staff of the hospital patients whose thyroid function is considered to be normal for study. Accordingly, the patient was referred for study on March 16. She received 25 μc of radioactive iodine (I^{131}) on that date, and her uptakes on the succeeding three days were 5%, 1.5%, and 0. In view of these strikingly abnormal figures in the absence of signs or symptoms of hypothyroidism, a basal metabolic rate and protein-bound iodine determination were requested. These were reported on March 19 as +3% and 13.3 mcg. per 100 cc., respectively. On April 5 (17 days after the last dose of Neo-Penil) she was again studied; her uptakes were 11%, 9%, and 6%, and her protein-bound iodine concentration on April 8 was reported as 5.5 mcg. per 100 cc. Review of this patient's chart indicated that the only iodine-containing drug she had received was Neo-Penil. On inquiry, Smith, Kline and French Laboratories reported that Neo-Penil contains 90 mg. of inorganic iodide per 500,000 unit dose or 18 mg. per 100,000 units. Krosnick (*J. Clin. Endocrinol.* 14:242 [Feb.] 1954) has reported transient elevations of the protein-bound iodine concentration after therapeutic doses of Neo-Penil. Accordingly it is felt that this represents another instance of iodine interference with the radioactive iodine uptake test.

GEORGE L. JACKSON, M.D.
1919 N. Front St., Harrisburg, Pa.

CONGENITAL DEFORMITY OF THE HANDS

To the Editor:—Dr. Barnett Zumoff published in the May 29, 1954, issue of THE JOURNAL, page 437, the report of an unusual type of congenital deformity of hands, consisting of symmetrical finger contractures. I had the opportunity to observe a similar case and, after Dr. Zumoff's article appeared, contacted the patient for additional information on his genetic history. Because of an absolute lack of literature on the subject this case, too, may be of interest.

The patient is a 41-year-old farmer who was originally admitted to the hospital because of a peculiar syndrome of cyclic episodes of hyperactivity, bulimia, and hypersomnia, resembling somewhat the Kleine-Levin syndrome. This syndrome developed after a hyperthyreotic condition that was successfully treated with propylthiouracil. His brother, whose hands show the same congenital anomaly, had hyperthyroidism that was treated in the same way at about the same time, but without any following complications. The hands of both brothers are shown in the accompanying illustration. The fourth and fifth fingers of both hands were disproportionally thinner than the others and in flexion contracture. The proximal interphalangeal joints of fingers two through five were broadened and slightly flattened and deviated toward the middle finger. The skin of the dorsal and volar surface was of sclerodactylic appearance, but on microscopic examination of it only moderate hyperkeratosis and acanthosis was found. According to the patient's statement,

this condition was a congenital one but never limited him in his activities. A similar picture was found in his brother and his 3-year-old daughter. Nothing abnormal could be detected in his parents, but the same condition existed in one of his mother's female cousins. This seems to indicate that the condition may be also a latent one transmitted by a female gene-holder.

ZYGMUNT LEWITUS, M.D.
Beilinson Hospital
Petah Tikva, Israel.

BRITISH NARCOTIC SYSTEM

To the Editor:—Several years ago a professor of sociology at an American university who is a self-appointed expert on drug addiction, after interviewing a few drug addicts, wrote an article in which he advocated that the United States adopt the British system of handling drug addicts by having physicians write prescriptions for addicts. He reported that this system had abolished the "black market" in narcotics and that consequently there were only 326 drug addicts in the United Kingdom. The professor followed the method used by dictators to "make it simple, say it often"; true or false, the public will believe it. "Adopt the British system" is now urged by all self-appointed narcotic experts who conceal their ignorance of the problem by ostentation of seeming wisdom. The statement was recently used by a Columbia University professor on a television program and in a national press release in advocating this system. A Citizens Advisory Committee report to the attorney general of California urged the British system. It has appeared in articles by university professors in several states. The *Yale University Law Review* published a supporting article. It is now accepted as a fact.

Nothing could be further from the truth. The British system is the same as the United States system. Following is an excerpt from a letter dated July 18, 1953, from the British Home Office, concerning the prescribing of narcotic drugs by the medical profession:

> "A doctor may not have or use the drugs for any other purpose than that of ministering to the strictly medical needs of his patients. The continued supply of drugs to a patient either direct or by prescription, solely for the gratification of addiction is not regarded as a medical need."

There is a black market for opium in the United Kingdom. Following is a typical seizure report:

> Seizure at Hull, England, on November 16, 1952. Report No. 247, communicated by the Government of the United Kingdom on January 12, 1953, to the Secretariat of the United Nations:
>
> Raw opium seized: 4 kg. 535.9 gr.

When Tham Pean Chi, a Chinese carpenter from the British motor vessel AVRISTAN (Frank C. Strick & Co.) coming from Basra, Iraq; Aden; Massawa, Eritrea; and Egyptian ports, left the dock, he was searched on suspicion, owing to his bulky appearance. The above-mentioned opium was found in the pockets of his jacket and in the pockets of a home-made calico waistcoat which had been designed specifically for the carriage of the drug. The waistcoat was worn beneath the accused's shirt. The accused stated that he had been given the opium in Massawa, Eritrea, by a man who gave him 30 Abyssinian dollars ($12) per pound (453.6 grammes) to carry the drug to the United Kingdom where he would be contacted by the purchaser.

Tham Pean Chi was sentenced to imprisonment for four months.

There was 74 lb. (33.6 kg.) of opium seized in the United Kingdom in 1952. Opium smokers in the United Kingdom who use smuggled opium are not referred to physicians to be supplied by prescription. There is a very considerable black market for hashish (marihuana) in the United Kingdom, with seizures being made almost every day. British newspapers indicate that the use of hashish has been increasing among teen-agers. No physician would give a prescription for marihuana in the United Kingdom, as he would be charged with a narcotic violation. Quoting from the annual report of the United Kingdom for 1952, "the number of seizures of hemp (hashish or marihuana) and opium provided the only evidence on which to base an estimate of the extent to which these drugs are illicitly used in the United Kingdom." There is also a black market for morphine and meperidine (Pethidine) in the United Kingdom. Twelve per cent of the illicit trafficking cases in the United Kingdom relate to forged prescriptions or concurrent supplies from more than one physician to obtain morphine or meperidine to gratify addiction. The British government arrests these addicts who forge prescriptions for morphine and meperidine. They are handled the same way in the United States. There are also robberies by addicts of drug stores or other establishments handling narcotics in the United Kingdom. These addicts go to jail and are not turned over to a physician to obtain prescriptions to continue their addiction.

The British government annual reports show only those addicts "known to the authorities." Twenty-five per cent are in professional classes. Opium and hashish addicts are not reported. The British government is a party to all the international narcotic conventions to which the United States is a party. They enforce treaties in the same manner as the United States. The British and United States systems for enforcing narcotic laws are exactly the same.

A pamphlet, "Narcotic Clinics in the United States," giving the history of the opening and closing of clinics, can be obtained free of charge by writing to the Bureau of Narcotics, Washington, D. C.

H. J. ANSLINGER
Commissioner of Narcotics
Bureau of Narcotics
Treasury Department
Washington 25, D. C.

IN A WAITING ROOM

To the Editor:—I had an appointment with my doctor recently and had an opportunity of observing his office nurse in action. As I walked into the waiting room, the door of the office was open and I saw the nurse talking to a pretty woman in her early thirties, whose hair was greying prematurely. A man who had been sitting in the waiting room joined the nurse and woman and identified himself as the woman's husband. The nurse said in a loud voice, "Yes, I know you are Mr. Joy." Then she proceeded to tell, in the same loud voice, an excruciatingly funny story—to her—about how she had made a mistake last week and taken the wife of a male patient for his mother. The poor woman staggered through the waiting room, with the stares of the waiting patients on her face, completely demoralized and looking at least 10 years older.

The nurse then asked the woman on my right to come in. A woman who was across the room said, "But I am next," as the woman on my right tried to say that the other woman was next. After the nurse went into a long diatribe about how she had to take the people who had appointments first, the woman across the room said, "But I have an appointment." Finally the nurse ushered in the right woman, whose face was flaming by that time. When another patient left, the nurse called me instead of the woman on my right. The woman said, "But I am next," and the nurse replied, "You wouldn't come in when I called you before, so you will have to wait." I looked at the woman, she shrugged her shoulders, and I went into the office.

The nurse asked me to step on the scales to be weighed. She then found that she had the wrong card and went out to get mine. I did not realize how long she would take so I stayed on the scale. By the time she came back I felt like a suspension bridge, swaying in the breeze. Then she proceeded to read my card. It had plenty on it after two operations, and all the time I continued to sway on the scale. Then she started to push the little levers around and said, "You've gained weight," in the most accusing voice, as if that hadn't been my aim and ambition. When I stepped off the scale she said, "Aren't you going to let me weigh you?" How did she know I had gained weight if she had not weighed me? By that time I was at the boiling point and had all I could to restrain myself from violence. I restrained myself nobly, but I blew up and told her a few things about trying to calm and soothe patients instead of aggravating them. There was no point in waiting to have my blood pressure taken —I'm sure it was high enough to cause a stroke or heart attack— so I walked out of the office.

(Name withheld)

WANTED BY FBI

To the Editor:—Kathleen M. Nagler, alias Kay Herman, Mrs. J. J. Whitmore, Kathleen M. Moran, and Kathleen M. Tomkin, is wanted by the FBI, after being indicted by a federal grand jury at Richmond, Va., on April 5, 1954, for violation of the Interstate Transportation of Stolen Property Statute. She allegedly conspired and participated with a male confederate in a swindle of an individual that resulted in more than $200,000

in stolen cash and jewelry being transported from the state of Virginia to the state of New York in March, 1954. The accomplice subsequently surrendered, but Kathleen Nagler is still at large. An American white female, this fugitive was born on Nov. 5, 1915, at Lolita, Calif. Of slender build, she is 5 ft. 6 in. tall, weighs 125 lb., and has a medium complexion. She has brown eyes and naturally dark brown hair, which may be dyed or worn in a bun. She presents a neat and attractive appearance, and has been employed previously as a clerk and stenographer.

To cover a noticeable scar on the lower front part of the throat, which reportedly resulted from a previous goiter operation, she usually wears a high collar, scarf, or necklace. Reportedly, she uses Lugol's solution, which is obtainable without a prescription, for a recurring thyroid ailment which might require additional medical attention. Any person having information concerning this fugitive is requested to notify immediately the Director of the FBI, Washington, D. C., or the nearest division of the FBI, the location of which is listed on the first page of local telephone directories.

Federal Bureau of Investigation
212 W. Monroe St.
Chicago 6.

GOVERNMENT SERVICES

ARMY

Physicians Needed at Redstone Arsenal.—Two medical officers are needed at Redstone Arsenal, Huntsville, Ala. The ratings for these positions are GS-12 and GS-13, paying $7,040 and $8,360 per annum, respectively. The industrial medical program includes the operation of a clinic and emergency stations. Applicants should submit standard form 57, Application for Federal Employment, to Civilian Personnel Officer, Redstone Arsenal, Huntsville, Ala. The arsenal, which is located in the Tennessee Valley, renders medical services to about 12,000 military and civilian employees.

Army to Add Fluorine to Its Water Supplies.—Fluoridation of drinking water that lacks fluorine has been approved for Army installations by the Army Medical Service. Surgeon General George E. Armstrong said the Army's Corps of Engineers will provide the engineering skill needed to install the process. Before posts and stations become eligible for the installation of a fluoridation unit, a request must be submitted to the Surgeon General accompanied by a report on the natural fluorine content of the water consumed on the post and the number of persons who would benefit from the procedure.

General Armstrong said, "It is now known that the amount of tooth decay in children is much greater in communities where drinking water is deficient in natural fluorides." Regulations now in effect to control the granting of requests for fluoridation of water at Army posts have global application. It is expected, however, that Army stations east of the Mississippi River will make up the largest number of those requesting fluoridation. Army personnel on duty in the Texas area and certain midwestern states have a water supply that contains a natural supply of fluorine. Alaska will probably be the first command outside the zone of interior to have fluorine added to Army water supplies.

Civil Affairs in South Korea.—The monthly civil affairs summary for South Korea for August, 1954, signed by Dr. Ragnar Nilssen, assistant chief, Public Health Branch, states that about 45 tons of medical books and journals contributed from all parts of the United States were received in Seoul and that the Rockefeller Foundation made a grant of $5,000 to provide current medical journals for the six medical schools, the School of Public Health, and the Ministry of Health.

The rehabilitation of the 40-bed Samchok Provincial Hospital was completed, and the hospital opened on Aug. 26. The construction of the Taegu Medical College Hospital was completed in August. There was said to be great activity everywhere in the rehabilitation and new construction of medical installations. The 80-bed Electric Hospital in Seoul will open soon, and a 30-bed hospital is under construction in Yongdongpo. The 40-bed Sokchori Hospital opened Aug. 26. The Hwa Sun Labor Hospital and the Hwa Sun Coal Mine Hospital, which care for the coal miners of that area, are increasing their hospitals from 10 to 30 beds. A National Veterans Hospital is nearing completion, and the St. Benedict's Sisters Hospital in Kyongsang Namdo is being rebuilt with an increase of 20 beds. A new 50-bed Baptist Hospital, a 30-bed Seventh Day Adventist Hospital, a new 200-bed hospital for the Maryknoll Sisters, and a 50-bed Holy Spirit Catholic Sisters Hospital in Miryang are under construction. The Kan Sing, Kyo An, and Yang Yang Hospitals in the Corps areas are nearly completed.

The fifth course in basic training for public health physicians was to start in September, but future plans were awaiting the completion of a survey by Dr. Lloyd J. Florio, professor of preventive medicine, University of Colorado Medical School in Denver, consultant for the American-Korean Foundation. The National Tuberculosis Center in Seoul was opened Aug. 30. Tuberculosis testing and BCG immunizations continue in all provinces, and it was planned to train 310 workers in BCG vaccination, including physicians, nurses, and midwives. The training courses were to be of 10 days' duration.

The Republic of Korea Ministry of Health reported 17 health centers in South Korea on Aug. 19. The Kyongsang Pukto Provincial Laboratory Unit was temporarily closed owing to lack of personnel. The Korean Red Cross operates nine ambulances that sometimes serve as mobile clinics to carry out immunization and preventive medicine programs in addition to giving limited medical care. In August the Red Cross was engaged in a fund-raising campaign for 100 million *hwan*, and 78% of that amount had been pledged by the Korean people themselves.

The total number of physicians registered was 7,128, of whom 2,718 were in private practice, 1,205 in government or provincial service, and 490 in public health dispensaries; the remainder were either with the Republic of Korea armed forces or their whereabouts were unknown. The standard of medical care was said to be still far below a reasonable standard even in the larger hospitals. Physicians still are being drafted into the Republic of Korea armed forces.

NAVY

Captain Canty Returns from Europe.—Capt. Thomas J. Canty, M. C., has returned from Europe, where he represented the Navy at the sixth Congress of the International Society for the Welfare of the Crippled and Disabled at The Hague, Holland, Sept. 12-18. Forty-six countries were represented at the congress. Captain Canty, head of the Navy's Amputee Center at the Naval Hospital, Oakland, Calif., presented a paper on "Amputee Rehabilitation and Research in Artificial Limbs." After the congress he visited hospital and rehabilitation facilities in Copenhagen, Denmark, and at Frankfurt, Hamburg, and Karlshue, Germany. At the Orthopedic Hospital in Copenhagen he performed an operation that had not been previously performed at that hospital. In this operation, a panel of skin is formed into a tube that is passed under a normal muscle in such a manner that a plastic hook can be inserted in the skin tube to activate a prosthetic appliance. Captain Canty spoke before the staff of the Copenhagen Orthopedic Hospital on the use of the artificial limbs developed at the Navy's Amputee Center in Oakland. He learned that the Functional Brace developed at Oakland was being used successfully in Denmark. This new brace for poliomyelitis victims permits the wearer to flex the appliance at the knee.

VETERANS ADMINISTRATION

Hospital News.—Dr. Emil A. Gutheil of New York, president of the Association for the Advancement of Psychotherapy, addressed the staff of the Veterans Administration Hospital at Northport, Long Island, N. Y., Sept. 30 on "Psychopathology and Therapy of Sleep Disorders."

Medical Advisory Group.—Dr. Wendell G. Scott, St. Louis, was recently elected chairman by the members of the Special Medical Advisory Group of the Veterans Administration at their quarterly meeting in Washington, D. C. The new vice-chairman is Dr. Robert M. Zollinger of Columbus, Ohio; continuing as secretary of the group is Dr. Brian B. Blades, Washington, D. C. The 20 member Special Medical Advisory Group was established by law to advise the Administrator and the Chief Medical Director on the policies and programs designed to insure the best possible medical care and treatment of disabled veterans.

PUBLIC HEALTH SERVICE

Personal.—Dr. Francis F. Heyroth of Cincinnati has been appointed a member of the National Dental Research Council, Surgeon General Scheele has announced. Dr. Heyroth is associated with the department of preventive medicine and industrial health, College of Medicine, University of Cincinnati, from which school he received his M.D. in 1925 and his Ph.D. in 1929. A biochemist, he has specialized in protein chemistry, nutrition, and the toxicology of substances handled in industry.

Dr. William McKinley Thomas of San Francisco has been appointed a member of the National Advisory Mental Health Council. Dr. Thomas received his M.D. from Meharry Medical College in 1930 and took his internship at Kansas City General Hospital; his postgraduate training was received at the Harvard School of Public Health, Army Medical Field Service School, and Stanford Medical School. His civic interests in San Francisco include membership in that city's Chamber of Commerce and the Commonwealth Club of California.

COUNCIL ON MEDICAL SERVICE

This is the 14th in a series of studies made by the Committee on Indigent Care of the Council on Medical Service concerning local plans for medical care of the indigent. The first 10 articles have been reprinted in booklet form and individual copies are available on request, as are subsequent articles that have been reprinted individually. "Guides for Evaluating Indigent Medical Care Plans" is also available in separate reprint form.

MEDICAL CARE FOR THE INDIGENT IN ALLEN COUNTY (FORT WAYNE), INDIANA

This is a study of the medical benefits available to the indigent and medically indigent of Allen County, Indiana. Allen County has 185,000 residents, of whom 135,000 live in Fort Wayne, an industrial area producing agricultural implements, automobiles, clothing, communication and electrical equipment, and copper products. The county is comprised of 20 townships; Wayne Township, which includes Fort Wayne, and 19 small rural townships that have little need for organized medical care programs.

ELIGIBLE POPULATION

The number of eligible recipients and those receiving medical care are shown in table 1. About 2.9% of the county population is on the assistance rolls. All who receive assistance under either program are eligible for medical care.

TABLE 1.—*Recipients of Assistance and of Medical Care*

	Eligible	Receiving Medical Care
General assistance *	3,267	673 (155 County Home)
Public assistance †	.....	...
Old age assistance	1,319	521
Aid to the blind	45	11
Aid to dependent children	710	210
Total	5,341	1,415

* Wayne Township only; average monthly case load, Jan.-June, 1954.
† Average monthly case load, July-Dec., 1953. Indiana does not have aid to permanently and totally disabled program.

Care for some medically indigent clients is provided through general assistance funds if the applicant can show eligibility for such aid; however, this is not considered as a separate and specific assistance class by the township trustee. Hospitalization also is provided by the county department to persons of marginal income when major or unusual services are needed.

ADMINISTRATION

The general and public assistance programs in Allen County are under different authorities; the county Department of Public Welfare is responsible for the public assistance program, and the township trustees, who are elected officials designated by state law as "overseers of the poor," are responsible for general assistance. Wayne Township is the only township with an organized program of medical care for general assistance clients and is the only one that will be discussed here; the remaining 19 townships, predominantly rural areas with comparatively few residents, do not require a specific plan for providing such care.

In Indiana public assistance is under the general supervision of the state welfare department; however, administration is left to the county departments. The state requires each county to set up a plan for providing medical services for local assistance clients and to submit this plan to the state agency for approval.

Members of the Committee on Indigent Care are: Drs. H. B. Mulholland, chairman, Charlottesville, Va.; E. A. Ockuly, Toledo, Ohio; Dean W. Roberts, Baltimore; A. J. Bowles, Seattle; E. P. Coleman, Canton, Ill.; J. L. Lattimore, Topeka, Kan.; I. Jay Brightman, Albany, N. Y.; and Mr. R. M. Hilliard, consultant, Chicago.

A detailed form has been devised that the counties may use to outline the services to be provided, the limits of responsibility, the fees, and methods of operation. Within the limits of this outline the county is allowed considerable leeway in devising its own program. Aside from the difference in administering authority, the methods of operation of the public and general assistance medical programs have many similarities. Eligibility for assistance is determined by case workers in the welfare department and in the township trustee's office. All those on the assistance rolls are eligible for medical care.

Bills for physicians' services, hospital care, prescriptions, and other services are sent to the respective administering agencies. All physicians' bills are reviewed by the Welfare and Indigent Committee of the Fort Wayne Medical Society, and dental bills are reviewed by a technical advisory committee established by the local dental society. Township clients needing medical care may obtain disbursing orders permitting them to obtain the services of a physician until the end of the current month. These disbursing orders serve as bill forms for the attending physicians. There are spaces for listing the number and types of calls made during the month and for other services rendered, such as surgical and obstetric procedures. At the end of the month the physician submits one of these orders for each township patient treated during the month, itemizing all services provided and the fees requested. A similar form is used by physicians treating welfare department patients.

The Welfare and Indigent Committee of the medical society, which reviews all physicians' bills, is composed of two five-man committees, one of which is an advisory committee to the welfare department and the other to the township trustee. The members of the welfare department committee are designated by the society, with welfare department approval, while the members of the committee that works with the township trustee's office are designated by the trustee himself, with medical society approval. The chairman of the latter committee has held this post, at the request of each trustee in succession, since this method of operation was originated in 1938. The combined committees meet monthly and consider each physician's bill for the preceding month. Bills are considered in relation to the services provided, to bills submitted by other physicians for treating the same patient, and to the committee members' personal knowledge of the physicians submitting the bills. Fees are checked against the established fee schedule, and charges that are considered too high or inappropriate are reduced or disallowed. Bills for public assistance care are then returned to the welfare department for payment. Bills for general assistance care are paid by the medical society from funds provided monthly by the trustee.

The medical society's president and secretary usually attend the committee's monthly meetings, assisting the committee on an ex officio basis. The committee acts not only as a fee review board but as a grievance committee for both physicians and assistance agencies. Participating physicians may personally consult with the committee if they feel a reduction in fees is unjustified. The committee also reviews occasional hospital bills, acts as an advisory board to determine the need for unusual or expensive treatments and drugs, approves cases for surgery, and generally provides professional counsel for the two programs. In addition, the Indigent Care Committee, which works with the trustee's office, conducts a periodic inventory of the pharmacy maintained in the township building to determine what drugs are available for general assistance patients and what additions are needed for the stock.

A facet of the administrative organization that makes for a particularly well-integrated program is the fact that the same person is an aid to the township trustee and in charge of his medical program in the morning and an assistant to the medical society's executive secretary in the afternoon. This arrangement has been in effect since the current medical program was established in 1938 and the present arrangements with the medical society were begun. At present both the general assistance load and the medical society activities are increasing so rapidly that this arrangement may have to be terminated. However, it has led to close liaison between physicians and the assistance program and has helped bring clearer understanding of both medical and township problems by both parties.

SERVICES AVAILABLE

General assistance and public assistance clients in Allen County receive about the same medical services. Wayne Township, in which Fort Wayne is located, is the only urban township in the county and contains all the county's hospitals. The amount of township medical care provided outside the township of Wayne is, as has been noted, comparatively slight and makes no significant difference in the general picture. Most patients from other townships receive hospital care in Fort Wayne, with the townships reimbursing the hospitals at the same rate as does Wayne Township. Both programs provide complete medical and hospital care, with free choice of a physician. Both provide prescriptions, nursing care, and home nursing. However, the township's program is somewhat more limited than the county's. The township, although it allows free choice of a physician, also has a part-time salaried physician who holds daily sessions in the township trustee's small clinic. General assistance clients are encouraged to come to this physician for examination and treatment but may be treated by the other practicing physicians in the area if they prefer. The trustee's office also maintains its own pharmacy, and, except in cases of emergency or in the pharmacist's absence, all general assistance prescriptions are filled here. The county welfare department allows its clients to have prescriptions filled by any pharmacist in the county who belongs to the local pharmacists' association. Dental care for township patients is limited and usually confined to children and to workers who require extractions and fillings. This work is done by a group of dentists who have agreed to participate in the program. The welfare department provides much more dental work and allows free choice of dentist, although special authorization is required for unusual or expensive work. In both programs eye treatment is provided only by ophthalmologists, but the welfare department has less limitation on this care and on the provision of eyeglasses.

There is little difference between the programs as regards hospital care. Neither limits the time allowed or the services provided so long as the attending physician decides they are medically necessary. The township trustee has a salaried nurse on duty at the township clinic; home nursing service for both programs is provided through the Visiting Nurse Service, supported by Community Chest funds. Both programs will provide prosthetic appliances when they are considered medically necessary; however, the township trustee supplies such large appliances as wheel chairs only on a loan basis. A Community Chest organization, the Medical and Dental Service, Inc., offers a medical casework service for those medically indigent persons not eligible for township assistance; it provides them with medical, hospital, and surgical care and provides dental care for their children. The state welfare department's crippled children's service provides a semimonthly orthopedic and consultative clinic for the northeast portion of Indiana at Lutheran Hospital, and the individual counties in this district furnish all necessary follow-up home nursing and physical therapy. The local hospitals provide a considerable amount of charity care for patients not eligible for the public programs, as well as absorbing that portion of the costs for assistance patients not paid from public funds. None of Allen County's hospitals maintain outpatient departments, so that the only clinic services available are those for general assistance clients at the township office.

PROVIDERS OF SERVICES

All of the more than 200 members of the Fort Wayne Medical Society are eligible to participate in both welfare and trustee programs; a monthly average of 66 took part in the trustee program during the first half of 1954. Individual physicians are not required to sign participation agreements. The clinic physician, appointed for an indefinite term by the medical society, is free to adjust his clinic schedule to fit the need. This "clinic" is primarily a physician's examining and treatment office rather than a complete ambulatory clinic. All three of Fort Wayne's hospitals participate in the program. Parkview Memorial Hospital has 242 beds, Lutheran Hospital 240 beds, and St. Joseph's Hospital 325 beds. Each hospital attempts to accommodate assistance patients in wards. Medical care at the county infirmary is furnished by a physician who serves part time. In emergencies five or six of Fort Wayne's nursing homes are also used for assistance patients. All dentists who are members of the Isaac Knapp Dental Society and have signified their willingness may participate in the public assistance program and in the township's program. All members of the Fort Wayne druggists' association may dispense pharmaceuticals for the welfare department but only the part-time clinic pharmacist may do so for the trustee, except in emergencies or when the needed drug is not available at this pharmacy. The Visiting Nurse Service, in addition to the clinic nurse for recipients of general assistance, is available by district to both programs.

PAYMENT FOR SERVICES

In both programs private physicians are paid according to a fee schedule last revised in 1945. This allows $2 for office and hospital calls up to a maximum of 15 per month, $3 for home calls, and $5 for night and Sunday calls. A mileage allowance of 50 cents per mile one way for calls outside the city is permitted. The surgical fee limit is $150. Payment for services not listed in the schedule generally follows the local Blue Shield Plan schedule. The part-time physician at the township clinic receives a salary of $150 a month. The medical society as agent for the trustee pays physicians for their services to the general assistance clients; the welfare department pays physicians directly for services to public assistance clients. Hospitals are paid by the two official agencies at a per diem rate for board and room costs plus full payment for other hospital services. The per diem rate, based on ward costs, is $7 at St. Joseph's and $7.70 at Parkview and Lutheran hospitals. At Parkview Hospital the welfare department also has a reduced rate for x-ray, laboratory, and associated services. The welfare departments pay for drugs at the retail price less 20%. The township trustee stocks his own pharmacy and pays a salary of $2,610 to the pharmacist; under this plan the actual cost of drugs to the trustee is about half their estimated over-the-counter value. The county infirmary is paid at the rate of $43 per month for each welfare department or township client who receives care.

TABLE 2.—*Medical and Related Costs of Public and General Assistance Programs, 1953*

	Old Age Assistance	Aid to Dependent Children	Aid to Blind	General Assistance *
Physicians' services	$ 41,944.37	$16,043.15	$ 847.65	$ 27,212.27
Dentists' services	4,299.46	4,767.88	72.00	1,175.50
Hospitalization	55,269.40	8,225.38	2,216.37	57,249.75
State institutions	.....	.....	.....	8,282.80
Nursing home care	44,428.72	.....	800.00	56,584.59
Drugs and pharmaceutical supplies	30,103.74	7,304.41	744.66	7,368.10
Others	3,888.87	980.10	88.00	1,390.40
Totals	$179,934.56	$37,320.92	$3,768.86	$159,263.41

* Wayne Township only.

COSTS AND FINANCIAL SUPPORT

Table 2 shows the expenditures of the welfare department and township trustee for medical care during 1953.

In Indiana public assistance grants to the client are limited by legislation to the amount for which federal matching funds are available. Indiana's share in the costs of aid to the blind comes entirely from state funds, while the old age assistance and aid to dependent children programs receive 60% of these funds from the state and 40% from the county. Costs for medical care in these programs may exceed the legal limitation on the size of assistance grants. The costs of the township medical assistance program are met by monthly payments to the medical society from appropriations based on an estimate of costs for the coming year. The trustee has a floating fund from which extra or emergency expenses may be paid; to date physicians have been paid in full for their services. Expenditures from Community Chest funds by the Medical and Dental Service, Inc., for care of the medically indigent amounted, in 1953, to $3,800 for hospital care, $3,600 for medical and surgical care and some appliances, and $3,000 for the dental clinic.

MEDICAL SOCIETY RELATIONSHIP

The Fort Wayne Medical Society has played a vigorous part in the development of the medical assistance programs. In the early 1930's the society studied ways of meeting indigent needs for medical care, formulated a plan, and campaigned actively for its acceptance. When the township trustee approved the plan in 1938 the society assisted in its organization and promotion, established a liaison committee, and has since continued to take an active role in maintaining the program. At the present time medical advisory boards work with both the trustee and the county welfare department, and the combined Welfare and Indigent Committee is diligent in maintaining high quality care and in paring expenses from monthly physicians' bills of both the township and the county.

SUMMARY

Medical care to the indigent of Allen County is furnished through welfare department and township programs. All clients of both the welfare department and the Wayne Township trustee are provided with free choice of physician, hospital care, and other necessary medical facilities, including care in the county infirmary and private nursing homes when needed. Free choice of dentist and pharmacist is provided to public and general assistance clients. The trustee maintains a clinic staffed by a part-time physician, a nurse, and a pharmacist and provides some dental service through the dentists who have agreed to participate in the program. Committees of the medical society are active in the supervision of medical aspects of both programs. They audit bills, provide consultation and authorization for surgery, handle grievances, and inventory the trustee's pharmacy. Reimbursement to physicians and other vendors is in accordance with fee schedules agreed on by the various professional societies; hospitals are paid on a per diem plus cost basis. The medical assistance programs provide care to the indigent of Allen County comparable in amount and quality to that available to other local residents. There are no pronounced deficiencies except some lack of coordination between county and township assistance programs, particularly in regard to which agency is responsible for care of some of the applicants.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Governmental Hospitals: Standard of Care Owed to Mentally Ill Patient.—This was an action instituted under the Federal Tort Claims Act to recover damages for personal injuries alleged to have resulted from the negligence of government personnel in an Army hospital. From a judgment in favor of the plaintiff, the government appealed to the United States court of appeals, 10th circuit.

The plaintiff was the wife of an enlisted member of the Armed Forces and also a veteran in her own right, having served in the Women's Army Corps, from which she received a medical discharge in 1944. On Aug. 1, 1947, she became a patient in an Army hospital at Camp Carson, Colo., in which she occupied a room on the second floor of the building in which she was quartered. She had been and was then suffering from an ailment diagnosed as neurotic, depressive reaction, chronic, severe, and manifested by suicidal thoughts and intent, and the defendant was fully aware of her mental condition. A guard was posted at the door of the room occupied by the plaintiff with instructions to watch her constantly. The plaintiff manifested signs of mental derangement by smashing a water glass and attempting to put pieces of the broken glass in her mouth, but she was prevented from doing so by the guard. After this incident, the plaintiff cried at length and acted depressed and agitated. A window in the plaintiff's room was open for ventilation, and no steps were taken to fasten it or make it secure. By leaving the room without anyone remaining to keep watch on the plaintiff, the medical officer in charge of the ward, or the guard, or both of them, failed to give her the constant care and attention necessary for her welfare. While all members of the personnel were absent from the room, the plaintiff jumped or fell from the window of her room to the ground outside and sustained serious injuries that resulted in the complete paralysis of her body from the chest area downward. She was totally disabled.

The government first contended that the plaintiff did not have any right to enter the Army hospital. It was contended that the hospital was not one for the care and treatment of mental patients; that the plaintiff was not entitled to be admitted to it; and that in treating and caring for the plaintiff the agents and employees of the United States were not acting within the scope of their duties. Under Army regulations sick wives of enlisted men in the Armed Forces may, said the court, be admitted to Army hospitals when suitable facilities for hospitalization are available. The hospital in question was not designed specially for the care and treatment of mental patients, and it may be conceded without so deciding that, when the plaintiff sought admittance for care and treatment, the managerial authorities of the hospital were vested with full power to decline to admit her as a patient on the ground that suitable facilities were not available. But she was admitted, the court pointed out, and admitting her amounted to a determination on their part that suitable facilities were available for her. Having decided that there were facilities available and having accepted her as a patient, the personnel at the hospital acted within the scope of their duties or employment in treating and caring for her. Any negligent act or omission on their part in the discharge of such duties which proximately caused injury to the plaintiff rendered the government liable under the Tort Claims Act.

The government also contended that it was wholly discretionary with the authorities at the hospital whether a guard should be placed over the plaintiff. Having exercised that discretion by placing the guard at her door, it was equally a matter of discretion whether he should be withdrawn, either temporarily or permanently, even though his withdrawal amounted to a mistake of judgment. The Tort Claims Act provides, the court pointed out, that it shall not apply to any claim based upon the exercise or performance of or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the government, whether or not the discretion involved be abused. While it was within the discretion of the managerial authorities at the hospital to determine in the first instance whether suitable facilities were available for the care and treatment of the plaintiff, having decided that such facilities were available and having admitted her, the government was not authorized to exercise in an unbridled manner, and without due regard for the known facts and circumstances, a plain and clear duty or function in respect to her care and treatment, with complete immunity under the act from liability for negligence in connection therewith proximately resulting in personal injury to the plaintiff.

Finally, the government contended that it was not an insurer of the plaintiff; that all reasonable precautions and those customary in like instances were taken by the attendants at the hospital in caring for the plaintiff; and that there was a complete lack of evidence showing negligence as a proximate cause of the accident and resulting injury to the plaintiff. The act subjects the United States to liability for a tort in the same manner and to the same extent that a private person would be liable in like circumstances. It is the general rule that while a hospital conducted for gain is not an insurer of the safety of its patients against personal injuries, whether self-inflicted or otherwise, it is required to exercise ordinary care for their welfare and safety against such injuries. No inflexible and unyielding yardstick can be laid down as constituting ordinary care or the lack of it in all cases. In each case, the question must be determined in the light of its own facts and circumstances. In determining what constitutes ordinary care, the condition of the patient should be taken into consideration. And in the case of a mental patient, the care must be reasonably adopted and proportioned to his known suicidal, homicidal, or other like destructive tendencies. In view of all the facts and circumstances, the leaving of the plaintiff in the room, alone and unattended, constituted negligence on the part of the agents and employees of the government.

Accordingly the judgment in favor of the plaintiff was affirmed. *United States v. Gray, 199 F. (2d) 239 (1952).*

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Cor Pulmonale: Incidence and Etiology in an Industrial City. F. J. Flint. Lancet **2**:51-58 (July 10) 1954 [London, England].

Flint states that cor pulmonale, like bronchitis, is a disease of industrial towns. When Wood gave the incidence of cor pulmonale among the various forms of heart disease as 5%, Flint felt that this percentage seemed surprisingly low; hence the decision to assess the incidence of the disease in Sheffield, and the attempt to discover the cause of its apparent local frequency. The present survey includes all patients with congestive heart failure admitted from Sheffield and the surrounding district to the medical wards of the City General Hospital, Sheffield, between March 17, 1952, and March 16, 1953, and the few in whom heart failure developed after admission to hospital. A diagnosis of congestive heart failure demanded a rise of cervical venous pressure above the sternal angle during inspiration and either peripheral edema or hepatic engorgement. In most cases all three signs were present. The 300 patients included 159 men and 141 women. Cor pulmonale was found in 64 men and 12 women. They had severe lung disease, central cyanosis, and sinus rhythm; there was no clinical, radiological, electrocardiographic, or postmortem evidence of other heart disease. The clinical features and the electrocardiographic and radiological pattern of cor pulmonale are described. Thromboembolic complications were rare, occurring only once in 76 patients. Of the 64 male patients with cor pulmonale 42 had chronic bronchitis and 16 bronchiectasis. None of the 12 females had uncomplicated bronchitis. Most, if not all, of these patients had emphysema. The precipitating cause of heart failure in 74 of the 76 cases of cor pulmonale was an acute respiratory infection, usually acute bronchitis; most of the patients were admitted during the winter. The life history of a patient with chronic bronchitis is punctuated repeatedly by respiratory infections. These are usually preceded by virus infections, such as influenza and the common cold. The virus seems to damage the bronchial epithelium and thus to weaken the defenses of the lower respiratory tract against bacterial invasion, with the result that mucus and pus exude into the bronchi. In persons with advanced emphysema respiratory infections have a suffocating effect, causing severe hypoxia and hypercapnia, which, if prolonged, may give rise to failure of the right side of the heart, cerebral depression, coma, and even death. Most of the patients with cor pulmonale in this study came from crowded homes, and all but two had a chronic infection of the respiratory tract with acute exacerbation; 66% had been engaged in the heavy iron and steel industry; and most of them, whether as grinders, fettlers, rollers, or furnacemen, had been exposed to excessive inhalation of various dusts, including silica, or to rapid changes of temperature; all had been exposed to the polluted atmosphere of Sheffield, and the incidence of heavy cigarette smoking was higher in this group than in the controls. Each of these factors may damage the respiratory tract. A third of the patients died, and for these 26 persons the average length of time between the first attack of congestive heart failure and death was 18 months, the maximum being five years. An incidence of 25% for cor pulmonale in all patients (40% in men and 8.5 in women) far exceeded the 5% incidence reported by Wood. The author stresses the importance of combatting air pollution.

The place of publication of the periodicals appears in brackets preceding each abstract.

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Therapy of Gram Positive Bacteremias: With Presentation of 4 Cases. R. R. Beckwith, E. M. Goyette, W. S. Spicer and C. D. Graber. Circulation **10**:56-64 (July) 1954 [New York].

According to Beckwith and co-workers, bacteremias caused by Streptococcus viridans can be cured with relative ease, while in infections caused by Micrococcus pyogenes var. aureus and by enterococci (the so-called resistant organisms) therapeutic failures are common. Four patients were successfully treated for a gram-positive bacteremia. One was a 28-year-old man and another a 36-year-old woman with enterococcic bacteremia caused by Str. liquefaciens and Str. faecalis, respectively. There was a 22-year-old woman with bacteremia caused by M. pyogenes var. aureus who responded satisfactorily to massive doses of penicillin combined with streptomycin and probenecid. The fourth patient, a 28-year-old woman with endocarditis caused by M. pyogenes var. aureus, was cured with neomycin after other antibiotics had failed. Certain fundamental principles considered essential to the improvement of therapeutic results in gram-positive bacteremias are emphasized. The primary aim of therapy should be the administration of a bactericidal agent or agents in sufficient quantity to attain a bactericidal level in vivo and to maintain that level for an adequate period. The importance of adequate bacteriological control of treatment is evident. Although no completely reliable method of testing the antibiotic sensitivity is available, the tube dilution-plate method provides the clinician with the most accurate guide to adequate therapy. In the treatment of bacteremia caused by M. pyogenes var. aureus, penicillin is the antibiotic of choice. Minimum initial dosage should be 20,000,000 units of penicillin daily for penicillin-resistant micrococci. Increased serum penicillin levels may be readily attained by giving 2 to 4 gm. of probenecid daily in divided doses. The addition of streptomycin, 2 to 3 gm. daily, may frequently produce a valuable synergistic effect. Therapy should be continued for a period of four to six weeks following the last positive blood culture and the patient observed for an additional two months. The suggested dosage for neomycin in cases of endocarditis caused by micrococci is 10 to 14 mg. per kilogram of body weight for continued administration, but doses of 15 to 20 mg. per kilogram of body weight may be used for a few days without risk of toxic effects. The tendency of neomycin to produce nephro and neurotoxicity (particularly ototoxicity) was manifest in the authors' patient treated with it. Bacitracin should be considered in micrococcic endocarditis, since it is also effective on gram-positive cocci. The usual dosage is 50,000 units intramuscularly every 24 hours in divided doses. The patient should be observed for impairment of renal function or abnormal urinary sediment. Clinical results clearly indicated that enterococcic bacteremia can usually be cured by high doses of penicillin combined with streptomycin. An initial minimum dose of 20,000,000 units of penicillin daily by continuous intravenous drip is recommended; it should be combined with 2 gm. of streptomycin intramuscularly and 2 gm. of probenecid daily in divided doses by mouth. Treatment should be continued for at least four weeks following the last positive blood culture. Use of the broad spectrum antibiotics, chlortetracycline (Aureomycin), oxytetracycline (Terramycin) and chloramphenicol, was disappointing, with clinical results far inferior to those obtained with penicillin combined with streptomycin.

Relationship of Ulcer Pain to pH and Motility of Stomach and Duodenum. E. R. Woodward and H. Schapiro. Proc. Soc. Exper. Biol. & Med. **86**:504-506 (July) 1954 [Utica, N. Y.].

The exact cause of pain of peptic ulcer has been the subject of controversy for many years. Observations were made on patients with peptic ulcer pain under conditions whereby simultaneous motility records and pH determinations were obtained from both stomach and duodenum. Patients selected for study had active but uncomplicated duodenal ulcers. Ulcer pain was produced in four of seven duodenal ulcer patients by the intraduodenal administration of 0.1*N* hydrochloric acid at a rate

that lowered duodenal pH to 1.88 or less. Onset of ulcer pain was not associated with any change in duodenal motility. Ulcer pain induced by intraduodenal administration of hydrochloric acid was not relieved by anticholinergic drugs, even though duodenal motility was abolished. When duodenal pH was elevated by neutralization or aspiration, ulcer pain was relieved. Intraduodenal administration of hydrochloric acid constantly inhibited motility of the gastric antrum.

Hemorrhage in Peptic Ulcer. J. C. Grant. Glasgow M. J. **35:**117-124 (June) 1954 [Glasgow, Scotland].

Grant shows that the mortality from bleeding peptic ulcers has varied in different periods. The relatively low mortality of less than 5% during the first two decades of this century was attributed to the large number of acute gastric ulcers, or gastric erosions, met with in young women and the relatively small number of chronic ulcers in older patients. Between 1925 and 1935 the mortality rose to 20%. This increase appeared to be due to an increasing incidence of bleeding from chronic peptic ulcer in older patients. The mortality has fallen since 1935, and this has followed the introduction of early feeding and drip blood transfusion. The relative incidence of gastric ulcer to duodenal ulcer varies in different regions. While in the London area gastric and duodenal ulcers are almost equally frequent, in Glasgow there are seven duodenal ulcers to one gastric ulcer. Of 720 patients with hematemesis and/or melena admitted to a Glasgow hospital between 1940 and 1951, 684 had peptic ulcer, carcinoma of the stomach or esophageal varices accounting for 31 of the 36 patients who did not have peptic ulceration. Of the 684 peptic ulcer patients 177 had hemoglobin levels below 40%. The site of ulcer was known in 199 patients and the ratio of duodenal and gastric ulcers was 7.7 to 1. The mortality for the whole group was 8.6%. It rose sharply after the age of 60 in both sexes. One hundred thirty-seven patients (20%) had recurrence of hemorrhage after admission to hospital, and the mortality in this group was 22.6% or almost three times as great as that for the whole group. In contrast, the mortality for the group of 547 patients (80%) with no recurrence of hemorrhage was only 5.1%. In the group with recurrence the mortality rose gradually with advancing years. Sex, length of ulcer history, previous hemorrhage, perforation, or gastroenterostomy did not significantly affect the mortality. The author believes that the best treatment for elderly patients with bleeding ulcer is replacement of blood loss by transfusion. If bleeding continues surgery is advisable, but not until the patient's general condition is satisfactory. The young patient who has recurrent hemorrhage may also require surgical treatment, but there is not the same urgency. The 40 to 50 year age group takes up a middle position, and in this group the condition of the individual patient must be carefully evaluated. The less fit the patient, the less well will he tolerate repeated blood loss. The surgeon who has the responsibility of advising surgical treatment finds his task difficult if he is seeing the patient for the first time shortly after a second or third hemorrhage. The surgeon should see all patients with hematemesis or melena on their admission and continue to visit them periodically during their stay in hospital. Should further hemorrhage arise the decision for surgical treatment could then be made more promptly.

Uric Acid in Two Patients with Wilson's Disease (Hepatolenticular Degeneration). C. Bishop, W. T. Zimdahl and J. H. Talbott. Proc. Soc. Exper. Biol. & Med. **86:**440-444 (July) 1954 [Utica, N. Y.].

A brother and sister with Wilson's disease (hepatolenticular degeneration) were found to have low serum urate levels and were injected with isotopic uric acid (N^{15}) for pool size and turnover rate determination. The pool size of both was well below normal and the turnover rate was approximately twice the normal value. Probenecid (Benemid) accentuated these findings in the sister but was not tried in the brother because of its adverse clinical effect. When ribose nucleic acid was fed to the brother there was a statistically significant increase in urinary uric acid and this "extra" uric acid was equivalent to about 55% of the calculated purine ingested. There was no significant rise in the excretion of nonuric acid purines after nucleic acid feeding, and this suggests that exogenous purine is mainly converted to uric acid before excretion. The authors point out that earlier investigations had proved that the blood amino acid level in hepatolenticular degeneration is normal even though an aminoaciduria is present. In contrast to this, the serum uric acid levels and the uric acid pool size are decreased according to the data presented here. Several mechanisms could be suggested to account for the difference in behavior of these two types of substances, but more data are needed before any explanation can be validated. Although any relationship between uric acid and the cause or pathogenesis of hepatolenticular degeneration is purely speculative, these findings nevertheless are interesting.

Studies on the Effect of Probenecid (Benemid) in Gout. R. M. Mason. Ann. Rheumat. Dis. **13:**120-130 (June) 1954 [London, England].

After the incidental finding that caronamide had a uricosuric action, it was shown that *p*-(dipropylsulfamyl)benzoic acid (probenecid [Benemid]) had a similar and more potent effect. This substance is presumed to act by interference with renal tubular mechanisms, bringing about reabsorption of urate from glomerular fluid; its uricosuric action is well documented, while its toxic effect on the kidney appears to be negligible. The side-effects, which included acute attacks of gout in some, indicated that this substance was a potent and nontoxic uricosuric agent and provided an opportunity to study uric acid excretion and associated changes of blood levels in subjects with gout. Of the seven patients presented in this paper six had acute attacks of gout during treatment with probenecid. Urinary uric acid and blood uric acid estimations were made. Attacks of acute gout occurred at a time when the level of circulating urate had been brought to normal. Mason suggests that one possible explanation of this phenomenon is that not uric acid per se but a precursor may be responsible for the acute attack. The answer to this problem may lie in the action of colchicine, for it is possible that colchicine acts by blocking the formation of this hypothetical precursor. If such is the case, then this must be an abnormal precursor, since colchicine has no effect on plasma uric acid level. There is some evidence, however, of another metabolic route in the formation of uric acid in subjects with gout. Studies with labeled glycine suggested that in persons with gout a more rapid mechanism exists for the transformation of glycine into uric acid than in persons not having gout, and they suggest that this may occur via a different metabolic route. Such a hypothesis would be consistent with Mason's findings that acute attacks of gout may occur when probenecid administration has produced a uric acid diuresis and brought the blood levels to normal, for it is possible that by removing the end product of the metabolic chain the formation of precursors might even be increased. It would also be consistent with the observations of Wood-Jones in 1950 and Barnett in 1951, who suggest that the basis of the acute attack is a vasomotor disturbance.

Hemochromatosis: Clinical Features and Method of Diagnosis in 27 Cases. M. H. Stauffer, H. R. Butt, and M. B. Dockerty. Gastroenterology **27:**31-45 (July) 1954 [Baltimore].

Stauffer and associates discuss the clinical features and diagnosis in 27 patients with hemochromatosis seen at the Mayo Clinic during the past five and one-half years. The disease was primary in 25 patients and secondary in 2. Needle biopsy of the liver appears to be the earliest as well as the most reliable method for diagnosis. Negative results of cutaneous biopsy were noted in seven cases, but results of hepatic biopsy were positive, demonstrating the value of obtaining hepatic tissue for histological examination. Jaundice was usually absent and excretion of sulfobromophthalein was often normal despite the presence of pigmentary cirrhosis. Hemochromatosis should be considered in any patient who has unexplained hepatomegaly. Diabetes mellitus was absent in 12 of the 27 patients, illustrating that this complication need not be present to establish the diagnosis of primary hemochromatosis. Diabetes is more frequently seen when the disease is advanced. Of the 25 patients who had primary hemochromatosis, 5 were eventually found to have hepatomas. The term "secondary hemochromatosis" is sug-

gested for cases in which refractory, aplastic, or hemolytic anemia is present and in which the number of transfusions appears inadequate to account for the disease on an exogenous basis. The term "exogenous hemochromatosis" is suggested when cirrhosis develops after 100 or more transfusions have been administered. It is suggested that the term "hemosiderosis" still be used for those cases in which severe anemia has required many transfusions, leading to excessive deposition of iron, but in which cirrhosis is absent.

SURGERY

Surgical Treatment of Cerebral Arterial Aneurysms. P. Wertheimer and J. Avet. Angiology **5**:259 (June) 1954 [Baltimore].

The two French authors saw 16 cases of cerebral arterial aneurysms in the space of five years. The patients were nine women between the ages of 31 and 68 years, and seven men between the ages of 30 and 54 years. Eleven patients had repeated subarachnoid hemorrhage (one had 9 episodes in 15 years), five had ocular paralysis, and four had hemiplegia. Another patient had an isolated paralysis of the third cranial nerve and trigeminal neuralgia; two more had syndromes of the sinus cavernosus. Another patient had partial epilepsy, and the last had bilateral ophthalmoplegia after severe cranial trauma. In all these patients, the location—supraclinoid in 11, infraclinoid in 5—of the aneurysm, which was usually sacciform and of the size of a pea, was shown by arteriography. After an adequate Matas test, 14 patients were treated by carotid ligation. In eight instances the common carotid was ligated (six ligations were complete or with arterial resection and two incomplete with fascia lata strip), while in six cases ligation was performed on the internal carotid (five complete and one incomplete). Four of the five patients with complete ligations of the internal carotid had hemiplegia. One episode of hemiplegia occurred 17 minutes after ligation and disappeared after removal of the ligature, thus necessitating partial ligation. Two other hemiplegias occurred a few hours after ligation. The fourth patient with hemiplegia died three days after operation. Six of the 10 remaining patients had no recurrence of subarachnoid hemorrhage, 3 had improvement in their ocular paralysis, and 1 was lost to follow-up. The authors stress the necessity of preoperative bilateral arteriography, measurement of ocular pressure, and electroencephalography. The dangers of anticoagulant therapy are pointed out. All these precautions were taken in the last four patients of the series but did not prevent postoperative hemiplegia in one of them. Only two patients underwent direct surgery of the aneurysm; one, 42 years old, died on the fourth day of massive softening, and the other, 46 years old, died of severe hemorrhage several hours postoperatively. The efficiency and relative harmlessness of ligation, as compared with the drastic quality of the direct approach, is brought out by this experience.

The Selection of Patients for Mitral Valvotomy. A. Wynn. M. J. Australia **1**:885-891 (June 12) 1954 [Sydney, Australia].

The following conclusions about the selection of patients for mitral valvotomy are based on the author's observation of 90 operated cases. 1. The selection of patients for mitral valvotomy can usually be made by careful consideration of the symptoms and signs together with results of electrocardiography and fluoroscopy. Rarely will additional investigations be required. 2. Effort dyspnea and hemoptysis are the two most important symptoms. When effort tolerance is assessed, allowance must be made for a decrease in physical capacity due to psychological factors. Shortness of breath and not weakness should be the factor that limits effort. 3. By careful evaluation of physical signs, the number of valve lesions may be determined and usually the hemodynamic significance of each. 4. If the left ventricle is enlarged, there is an additional lesion present that virtually rules out mitral valvotomy. The best evidence of left ventricular enlargement is obtained from the character of the apex impulse. Electrocardiography and fluoroscopy are less helpful unless there is no associated right ventricular enlargement. 5. The absence of clinical evidence of right ventricular enlargement, including an examination after effort, virtually excludes the possibility of significant mitral stenosis. 6. Although it is difficult to assess the presence and degree of mitral incompetence if there is also mitral stenosis, the following points are helpful: muffled first sound; loud mitral systolic murmur; no "opening snap"; short or absent mid-diastolic murmur; a loud third heart sound; clinical, electrocardiographic, or fluoroscopic evidence of an enlarged or hyperdynamic left ventricle; a large left auricle; and gross systolic expansion of the left auricle. 7. Gross mitral incompetence may occur in the absence of a systolic murmur and a loud mitral systolic murmur in the absence of mitral incompetence. 8. Patients with greatly enlarged hearts, long-standing congestive cardiac failure, gross tricuspid incompetence, significant aortic lesions, or mitral incompetence rarely benefit much from mitral valvotomy. 9. The ideal patient for mitral valvotomy is the young patient with moderate limit of effort, a small heart, and mitral stenosis as the sole valve lesion. Operative mortality and morbidity in these patients are low, and the clinical improvement is often remarkable.

Resection of Rectal Carcinoma and the Viewpoint of d'Allaines. T. Hoffmann. Beitr. klin. Chir. **188**:444-460 (No. 4) 1954 (In German) [Munich, Germany].

Hoffmann points out that d'Allaines and his associates of the Broussais Hospital in Paris believe that resection and preservation of the function of the sphincter muscle should be the aim in the surgical treatment of carcinoma of the rectum. The immediate as well as the late results obtained by d'Allaines over the last two decades prove that this aim can be realized in more than two-thirds of the patients with rectal carcinoma. Resection is possible in all tumors 10 cm. or more away from the anus whenever there is a possibility of performing a broad exeresis of from 15 to 20 cm. of the proximal intestine as well as of the peritumoral tissues to both sides; distal to the tumor a resection of 5 cm. of the intestine is sufficient. The method of choice is a one-stage abdominosacral resection with a temporary artificial anus for from four to six weeks' duration. The technique for this procedure as carried out by d'Allaines is briefly described. The conservation of the entire sphincter insures good continence. The functional results of Babcock's procedure are not as satisfactory, and for this reason the author feels that it should be used only in special cases, such as in tumors close to the anus (6 to 9 cm.) and in cachectic patients to avoid need of prolonged bed rest.

NEUROLOGY & PSYCHIATRY

Prefrontal Lobotomy and Transorbital Leucotomy: Comparative Study of 175 Patients. F. A. Freyhan. Am. J. Psychiat. **111**:22-32 (July) 1954 [New York].

Freyhan reviews the results of psychosurgical operations performed on 175 patients between 1938 and 1952 at the Delaware State Hospital. Their previous admissions were known and the course of their illness could be investigated in detail. There is a close contact with patients now at home and with the milieu in which they live; there was uniformity of application of diagnostic criteria and discharge policies. Seventy-one patients underwent prefrontal lobotomy and 104 transorbital leukotomy. The same surgeon performed all of the transorbital leukotomies and most of the lobotomies were also performed by one surgeon. Patients were selected for psychosurgery because of chronicity of illness, resistance to other treatments, frequency of relapses, or violent, destructive, and agitated behavior. The great majority had had ineffective electroshock therapy, insulin coma treatments, or a combination of both. The table that compares the results of the two operations lists the social response patterns. Patients who are now "at home" improved sufficiently to adapt in a manner of which they were previously not capable. The "improved" group comprises patients who could be transferred to more advanced wards, who assumed certain responsibilities in the hospital, or shifted their attention from preoccupation with various pathological symptoms to social activities. The "unchanged" group comprises all patients in whom psychosurgery was a therapeutic failure. The "relapsed" group includes those patients who changed from a favorable to a less favorable psychological status. The percentage of favorable results was similar with the two operations (close to 30%).

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The death rate, undesirable personality changes, and postoperative convulsions were minimal with transorbital leukotomy in contrast to lobotomy. The high death rate in the lobotomy series (12.7% operative mortality) constitutes the principal difference in outcome. The higher relapse rate in lobotomy is explained by the longer time interval for observation. Psychosurgery should aim at the least cerebral damage. Its therapeutic benefits can be dramatic in individual cases but are rather limited on the whole. It seems desirable to narrow the range of applicability in order to obtain more satisfactory results.

Therapeutic Experiences with Cocarboxylase (Berolase) in Multiple Sclerosis. H. Leube. Medizinische **27/28:**961-962 (July 10) 1954 (In German) [Stuttgart, Germany].

Cocarboxylase (Berolase), i. e., phosphorylated vitamin B_1, the coenzyme of carboxylase, was given intramuscularly in doses of 25 mg. daily for two weeks and then in doses of 12.5 mg. daily for at least an additional five to six weeks to 16 patients with multiple sclerosis. Five patients had chronic multiple sclerosis of more than three years' duration without definite bouts. The remaining 11 patients were having their first bouts of the disease, or at least recent bouts. Seven patients had an increased number of cells in their cerebrospinal fluid, varying from 15 to 130. Treatment with cocarboxylase was instituted on the concept that vitamin B_1, which is important for the nervous system in preventing concentration of pyroracemic acid in the central nervous system, can produce this effect only if it is present in phosphorylated form. Vitamin B_1 cannot exert this effect in patients with multiple sclerosis because of a disturbance of phosphorylation. Since treatment with cocarboxylase is a substitution therapy it must be continued with daily doses of 12.5 mg. even if the clinical symptoms have already subsided partly or completely. Although subjective improvement and a slight decrease of spasms occurred in three of the five patients with chronic multiple sclerosis, the effect of the treatment was not convincing in these patients. On the contrary, highly satisfactory results were obtained in the 11 patients with recent bouts. Fatigue and weakness disappeared within a few days of treatment. Pyramidal signs became less pronounced or disappeared completely, cloni were reduced, the intention tremor improved. Most impressive was the decrease in the number of cells in the cerebrospinal fluid of patients with pleocytosis. Pretreatment levels were reduced from 15 to 4 and from 130 to 21. The cerebrospinal fluid was restored to normal in all patients within 4 to 10 weeks. Despite a certain tendency to remission in recent bouts of multiple sclerosis, the therapeutic effect of cocarboxylase cannot be denied, particularly in view of the less satisfactory results that were obtained less rapidly by other methods of treatment.

GYNECOLOGY & OBSTETRICS

The Incidence of Postpartum Hypopituitarism. H. L. Sheehan. Am. J. Obst. & Gynec. **68:**202-223 (July) 1954 [St. Louis].

According to Sheehan hypopituitarism is one of the most serious long-term sequels of obstetric complications, in comparison with which prolapse, stress incontinence, and pelvic adhesions are only minor local inconveniences. The primary pituitary lesion occurs at the time the patient is under the care of the obstetrician. If the obstetric conditions have been such (retained placenta or postpartum hemorrhage) that this lesion might have occurred, the obstetrician should inform the family doctor, so that any subsequent hypopituitarism can be diagnosed early, because these patients generally do not consult anyone about their amenorrhea. During the general circulatory disturbance that follows postpartum hemorrhage the blood supply to the anterior lobe of the pituitary is interrupted and it then undergoes ischemic necrosis (infarction). If the original necrosis involves more than about two-thirds to three-fourths of the lobe there will be some subsequent pituitary insufficiency; if it involves practically all of the lobe the subsequent insufficiency will be severe. The patient then continues as a chronic invalid for from 5 to 20 years and dies in coma. A table that records the incidence of fresh pituitary necrosis at autopsy in 127 patients who died 12 hours to 35 days after delivery and another table showing the incidence of symptoms of hypopituitarism in 166 live patients some years after delivery both indicate the causal importance of hemorrhage and shock at delivery. The clinical picture of hypopituitarism is not well understood and these patients often do not seek medical aid because they are mentally dull. This explains why this cause of chronic invalidism in women was formerly believed to be a rarity. In the past few years it has become clear that the condition is relatively common. A series of nine cases that were proved at autopsy during the past four years are recorded to illustrate the standard clinical and pathological pattern and its variations. The necropsy in the first patient revealed that the pituitary had a normal stalk and pars tuberalis, but the posterior lobe showed areas of atrophy. The anterior lobe was represented by a little fibrous tissue in which only a tiny lamina of parenchymal cells could be found, estimated as about 1% of the original gland. Clinically the patient was of hypothyroid type and might well have been described as having "pituitary myxedema." The thyroid was small, but the most striking secondary change found at autopsy was the severe atrophy of the adrenals.

Bilateral Breast Cancer. W. Trevor. New York J. Med. **54:**1937-1941 (July 1) 1954 [New York].

Four per cent of all mature women will contract breast cancer, and the incidence of cancer occurring in the opposite breast is approximately double this (8 to 10%) in women with proved cancer of one breast. Six cases of bilateral breast cancer are reported. Four of the patients are living and well without evidence of recurrence five and one-half, five, four and one-half, and two and one-half years, respectively, after the second mastectomy. The cause of bilateral breast cancer may be a new primary malignant focus in the opposite breast or a lymphatic spread to the second breast from the first. Bilateral breast cancer is divided into two classifications, "nonsimultaneous" and "simultaneous." The prognosis of the nonsimultaneous type is excellent, often being better than unilateral breast cancer after radical mastectomy, and reaches 70% five year survivals after the second radical mastectomy in some series. Treatment consists of bilateral radical mastectomy with postoperative roentgen ray therapy.

PEDIATRICS

Periarteritis Nodosa in a Nine-Month-Old Infant. E. Liban, Z. Shamir and S. Schorr. A. M. A. Am. J. Dis. Child. **88:**210-215 (Aug.) 1954 [Chicago].

Only 10 cases of periarteritis nodosa occurring in the first year of life could be found in the literature. A new case is reported in a baby girl in whom symptoms (vomiting, failure to gain weight, and attacks of fever) reportedly were present from birth. At the age of 6 weeks, a diagnosis of congenital heart disease was made at the Hadassah University Hospital, Jerusalem, Israel, on the basis of the patient's cyanosis and heart murmur. A second hospital admission showed the infant to be in a state of marasmus. Cyanosis and dyspnea were marked, and moist rales were heard over both lungs. Her condition deteriorated progressively despite therapy with penicillin, chlortetracycline, and oxygen, and she died 10 days after admission. The diagnosis of periarteritis was made at necropsy, at which time it was also seen that the disease had partly healed. Most of the vascular lesions were old, fibrotic, and acellular. Even the acute lesions, which were few and found only in small arteries, showed only a slight degree of edema, fibrinous exudation, and cellular infiltration devoid of eosinophils. The diagnosis of periarteritis during life is difficult because of the great variety of the clinical manifestations of the disease. Of the 10 cases reported in infants under one year of age, only one was diagnosed during life, by histological examination of a subcutaneous nodule. The present case is the only one in which periarteritis nodosa has been found in the arteries of the lungs in an infant less than one year old. In adults these lesions are fairly common; on the other hand, the coronary arteries are more frequently involved in children. The disease may possibly have developed in utero in this case; such a hypothesis was postulated by Wilmer in two cases of periarteritis nodosa in babies aged 10 and 25 days, respectively.

Juvenile Thyrotoxicosis: Results of Treatment in 30 Cases. R. F. Allen, E. Rose and E. K. Rose. Pediatrics **14:**38-44 (July) 1954 [Springfield, Ill.].

Allen and associates report the therapeutic results obtained in 30 children in whom symptoms of thyrotoxicosis appeared before the age of 15 years. Fifteen patients received thyroid irradiation, with or without stable iodine, and 15 received prolonged treatment with antithyroid compounds, with or without stable iodine. The authors did not employ radioactive iodine in children with thyrotoxicosis, because they do not believe that the possibility of late untoward sequelae can be excluded in this form of therapy. The final therapeutic results could be fairly assessed in 24 of the 30 children treated. Satisfactory remissions were obtained in 17 of these. The results were similar in those who were irradiated and in those who received antithyroid compounds. Satisfactory remissions were obtained in five of the six patients subjected to thyroidectomy. The authors feel, however, that thyrotoxic children without nodular goiters should be given a long trial with antithyroid compounds before any resort to thyroidectomy despite the fact that the over-all results from nonsurgical therapy do not compare favorably with those to be expected from thyroidectomy. The preservation of an anatomically intact thyroid for adjustment to the endocrine stresses of puberty and the remaining growth period and the low incidence of post-therapeutic myxedema are the chief reasons for conservative therapy.

DERMATOLOGY

Lupus Erythematosus: Treatment by Combined Use of Massive Amounts of Pantothenic Acid and Vitamin E. A. L. Welsh. A. M. A. Arch. Derm. & Syph. **70:**181-198 (Aug.) 1954 [Chicago].

Welsh reports observations on 67 patients with lupus erythematosus (diagnosis confirmed by biopsy), who were treated with massive doses of pantothenic acid derivatives combined with vitamin E. There were 36 patients with chronic discoid, 17 with disseminated discoid, 11 with subacute disseminated, and 3 with acute disseminated lupus erythematosus. Twenty-eight patients had had no previous therapy; 39 had had previous treatment, consisting of prolonged and diversified types of therapy including gold, bismuth, arsenic compounds, liver, salicylates, and steroid hormones. The combination of the pantothenic acid derivatives and vitamin E produced improvement in all patients, even in the group with chronic lupus erythematosus in whom the disease had existed for from 10 to 30 years. This is Welsh's second report on the combination therapy, a preliminary one having been published previously. A review of the work of other investigators, who used these agents individually rather than in combinations, disclosed that their results were mostly unfavorable. Welsh offers explanations why the use of either of the individual agents results in therapeutic failures, and why their combination produces favorable results. Early in this study, patients were treated with the combined use of relatively small amounts of one of the pantothenic acid derivatives and one of the vitamin E preparations. Later, it became apparent that higher dosages were required. The author concludes that the combined use of massive amounts of pantothenic acid derivatives and vitamin E constitutes a safe and effective approach to treatment of patients with chronic discoid, disseminated discoid, and subacute disseminated lupus erythematosus. Limited experience suggests that this procedure is valuable also as maintenance therapy for patients with acute disseminated lupus erythematosus, in whom the acute phase has been controlled by the steroid hormones.

Histopathological Diagnosis of Malignant Melanoma. M. Couperus and R. C. Rucker. A. M. A. Arch. Derm. & Syph. **70:**199-216 (Aug.) 1954 [Chicago].

Couperus and Rucker discuss the results of their studies on the microscopic aspects of primary and metastatic malignant melanomas of the skin, from which they attempted to draw conclusions regarding the most frequent and definite features of malignant melanoma. Of the 598 cases that were reported as melanomas in the three hospitals from which the authors obtained their material, 85 cases were rejected as having incomplete histories, no biopsies, or inadequate sections. Forty cases studied histopathologically were diagnosed as not being malignant melanomas. Of the 473 cases diagnosed as malignant melanomas, 33 were primary in the eye, 141 were primary malignant melanomas of the skin, 38 were metastases to the skin, and 261 cases were metastatic to internal organs. On the basis of studies on 179 cases of malignant melanomas of the skin (141 primary and 38 metastatic lesions) they conclude that the diagnosis of a primary malignant melanoma of the skin can be made if the following criteria are present in association with junctional features: (1) an inflammatory infiltrate at the periphery of the lesion, (2) more than an occasional mitotic figure, (3) giant cells with a single bizarre nucleus, (4) marked pleomorphism, (5) general enlargement of all tumor cells, (6) tumor cells and mitoses in the epidermis. If associated with a junction nevus, usually one or two of these features are necessary to arrive at the diagnosis of a malignant melanoma. In most instances three or more of these factors will be present in a primary malignant melanoma. Criteria that the authors classified as of secondary importance may, nevertheless, be essential in making a diagnosis in a given instance, and they are always of value as supplementary evidence. These criteria are melanin pigmentation, hyperchromatism of the nucleus, prominence of the chromatin network and of the nucleoli, alveolar grouping of the tumor cells, junctional features, multinucleated giant cells, peripheral rete peg elongation, ulceration, and dysjunction of the tumor cells. The junction or junction compound nevus presents the chief problem in the differential diagnosis of the malignant melanoma. In the uncomplicated state of this nevus, no inflammatory infiltrate and practically no mitotic figures are found, while in the primary melanoma of the skin the inflammatory infiltrate is always present and mitotic figures nearly always present. Single nucleus giant cells with bizarre nuclei, which are present in 89% of malignant melanomas, are never seen in benign nevi.

OTOLARYNGOLOGY

The Rhesus Factor in Deafness. F. Cavanagh. J. Laryng. & Otol. **68:**444-460 (July) 1954 [London, England].

Cavanagh discusses the Rhesus factor, the pathology, clinical aspects and treatment of erythroblastosis fetalis, and the association of deafness and Rhesus sensitization. He reports studies on three groups of children, two of whom had a history of Rhesus factor sensitization. One group consisted of 118 deaf children. In this last group blood samples of the children and their mothers were studied for Rhesus factor incompatibility, and the details of the first two weeks of life were investigated. This group of 118 deaf children included three with Rhesus factor sensitization. Six cases of deafness were found among the 124 children belonging to the two groups with a history of a Rhesus factor sensitization. Otologists and pediatricians should give attention to this possible sequel of Rhesus factor incompatibility.

Olfactory Esthesioneuroepitheliomas of Louis Berger. L. Frühling and C. Wild. A. M. A. Arch. Otolaryng. **60:**37-48 (July) 1954 [Chicago].

The occurrence of true olfactory esthesioneuroepitheliomas of the nasal fossae, first described by Louis Berger, is reported in four men. The symptomatology consisted of nasal obstruction, nasal hemorrhages, headache, and anosmia, and thus was quite usual and in no way specific. Endoscopic examination of the nose revealed the presence of a tumor, but clinical diagnosis was not possible. The tumor was removed surgically in all four patients. The authors emphasize that any slightly unusual or suspicious polypoid formation in the nasal fossae should be subjected to microscopic examination. This was performed in the authors' cases. Microscopic diagnosis may present certain difficulties, particularly to the histologist unaware of the existence of these nerve tumors. In addition to the pseudoepitheliomal forms, there exist pseudosarcomal forms with spindle-shaped elements, or with lymphocytoid elements, or even polymorphous forms. True neuroepithelial rosettes (tall cylindrical cells with

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distinct outlines at the apex and the sides, the inferior portion of the cell body disappearing in neighboring elements) were observed in three of the surgical specimens, and typical neurospongial cells were seen in all four specimens. A rigorous histological technique with, especially, a study of the collagen, using Masson's trichrome stain, can be of great help. The extreme radiosensitivity of the true olfactory esthesioneuroepitheliomas is stressed. The total dosage employed by the authors varied from 4,500 to 6,500 r. Only one of the four patients was followed up; this patient survived for more than five years after surgical removal of the tumor followed by irradiation therapy and is still in good health. The authors believe the preferred method of therapy to be surgical ablation of the tumor mass followed by a course of high-dosage irradiation. Neurogenic tumors of the nasal fossae originating in the olfactory organ are infrequent, but their rarity is partially due to the failure to recognize them owing to the possibility of microscopic confusion with glandular epitheliomas or sarcomas. The attenuated malignancy of these tumors, their extreme radiosensitivity, and the considerable length of survival of the carefully treated patient, are emphasized.

THERAPEUTICS

Prolonged Cortisone and Hydrocortisone Therapy. C. E. Arbesman and N. B. Richard. J. Allergy **25**:306-311 (July) 1954 [St. Louis].

Seventy-five patients, 63 of whom were asthmatic, had prolonged therapy with cortisone, hydrocortisone, or both. The general result, insofar as it could be evaluated, was satisfactory. Three important facts were gained from the study: 1. Hydrocortisone is at least equally as effective as cortisone in the relief of bronchial asthma. 2. The comparable effective dose of hydrocortisone is approximately two-thirds that of cortisone. 3. The proper maintenance dosage level for each patient is more important than the choice between cortisone and hydrocortisone.

Treatment of Chronic Joint Disease with a Derivative of Colchicum Autumnale. S. Rizzente. Minerva med. **45**:1784-1787 (June 20) 1954 (In Italian) [Turin, Italy].

Fifteen patients, 65 to 85 years of age, with chronic disease of the joints (ankylosis and/or arthritis deformans) were treated with "colchicoside," a derivative of Colchicum autumnale. From the pharmacological standpoint, the action of this drug is like that of colchicine, but it is much less toxic and a therapeutic dosage 50 times larger than that of colchicine can be used. Pain was marked in all these patients, and active and passive immobility was present in all. Previous therapy had been of no avail. A dosage of 5 to 10 mg. of the preparation was given intravenously for 5 to 15 day courses with an interval of 50 days between. Administration of the drug had to be discontinued in two patients because of a marked gastric disturbance. The effect on pain and motility was good in 11 patients, and in 10 of these the general condition and well being were improved. A slight leukopenia with eosinopenia and lymphocytosis was observed in 8 patients; the sedimentation rate and the arterial pressure increased slightly in 12 and 9 patients, respectively; azotemia, glycemia, and urine were not modified, nor was the objective condition. Because of the good effects of the preparation on pain and motility and the absence of side-effects, Rizzente recommends this drug for further clinical trial in patients with chronic disease of the joints.

PHYSIOLOGY

Relationship of Physiologic Third Heart Sound to the Jugular-Venous Pulse. E. E. Eddleman Jr., K. Willis, P. P. Walker and others. Am. J. Med. **17**:15-16 (July) 1954 [New York].

Heart sounds, carotid pulses, jugular-venous pulses, electrocardiograms, as well as a history and physical examination, were obtained in 60 young adult medical students. No cardiac abnormality was noted in any of the subjects. A Cambridge 4-channel, direct-writing recorder was principally used. Most of the subjects with the third heart sound were restudied later, by recording the heart sounds and jugular-venous pulses on a Sanborn twin-beam photographic oscillograph. Jugular pulses were obtained high in the neck and over the jugular bulb with the use of a glycerine capsule as well as with the suction-cup-type end piece. Care was used to obtain as "pure" a jugular pulse as possible. The time of the occurrence of the third heart sound, in relationship to the jugular-venous pulse, was identical with all types of recording technique used. A third heart sound was recorded in 11 of 60 subjects. This was a low-pitched sound following the second heart sound. It was best heard directly over the apex in the recumbent position. The phonocardiographically recorded sound occurred at the peak of the V-wave in the jugular-venous pulse, suggesting that the physiological third heart sound is the result of the opening of the atrioventricular valves and is in reality a "physiological opening snap." In recent years the third heart sound has been considered to occur during the period of maximal ventricular filling. The present study reverts to the older view that it is produced by the opening of the atrioventricular valves, hence is a physiological opening snap. An exaggerated opening snap consequently is not necessarily indicative of mitral stenosis.

New Studies on the Physiology and Pathology of the Lymphatic Circulation. Istvàn Rusznyàk. Minerva med. **45**:1468-1473 (May 23) 1954 (In Italian) [Turin, Italy].

The author's studies at the Medical Clinic of the University of Budapest on the origin of edema revealed the importance of the lymphatic circulation not only in producing edema but also in maintaining the fluid balance of the body in general. He found that the lymph vessels are susceptible to a vasoconstrictor action capable of blocking the lymph circulation. This action depends directly on the sympathetic, and the lymphangiospastic impulses follow the same course as do the periarterial sympathetic fibers. Thus, in opposition to old theories, the circulation in the lymphatic vessels is not a passive phenomenon but one that is closely dependent, as the blood circulation, on the autonomic nervous system. In certain circumstances the lymphatic circulation may become insufficient. It is a mechanical insufficiency when organic alterations, such as tumor compression, lymphangitis, thrombophlebitis, scars, and inflammations, occlude the efferent lymphatic vessels. It is a functional insufficiency when the vessels become closed because of their own spasm or because of hemodynamic causes. The author also found that not all the lymph circulating in the peripheral vessels reaches the thoracic duct; part of it is reabsorbed in the sinuses of the lymphatic nodes and through the walls of the lymphatic vessels. He also studied the importance of the lymphatic circulation on the function of each organ. With regard to the kidney, it is known that occlusion of the ureter does not produce severe alterations of the renal parenchyma. His experiments on dogs revealed that the urine that is produced in such cases from the renal pelvis reaches the interstitial tissue of the kidney and is reabsorbed through the lymphatic vessels. When the urine that reached the interstitial tissue and the exudate of the capillaries resulting from the toxic effects on them are not eliminated in great quantity by the lymphatic vessels, hydronephrosis develops, and the kidney may last sometimes for some weeks but usually only for a few days. His studies on the lymphatic circulation in the liver confirmed the presence of Desse's space and indicated that it is an essential part of the hepatic interstitial tissue. Concurrent ligation of the common bile duct and the efferent lymphatic vessels in dogs caused alterations that were severer than those resulting from ligation of the common bile duct alone. In studying the lymphatic circulation of the heart in dogs, he ligated the lymph nodes and then the thoracic duct and the large right lymphatic vessel, sparing nerves, arteries, and veins. The electrocardiograms taken a few days later revealed pronounced alterations. Ligation of the coronary sinus or occlusion of the lymphatic circulation in the heart did not threaten the life of the dogs, but when the two were combined, 12 of the 13 animals died three to six hours after the intervention. When venous thrombosis develops in the heart, the eventual consequences that may derive depend greatly on the reaction of the lymphatic vessels of the heart.

BOOK REVIEWS

Principles and Practice of Antibiotic Therapy. By Henry Welch. In collaboration with Braley, and others. Specially edited by Félix Martí-Ibáñez. Cloth. $12. Pp. 699, with illustrations. Medical Encyclopedia, Inc., 30 E. 60th St., New York 22; distributed by Blakiston Company (division of Doubleday & Company, Inc.), 575 Madison Ave., New York 22, 1954.

This new book provides broader coverage of the subject and brings up-to-date its predecessor, "Antibiotic Therapy," by Welch and Lewis. The senior author of the former publication has prepared the new book in collaboration with 16 other authorities. The new book consists of three parts. The first deals with historical, developmental, microbiological, pharmacological, and pharmaceutical aspects of the antibiotics, including a chapter on their synergism, antagonism, and hormesis. The second part discusses clinical uses according to various types of infection; the third part, according to the specialties of ophthalmology, pediatrics, oral surgery, and dentistry. The first part includes much detailed information on the commercially available forms of antibiotics. Some of this pertains to regulatory aspects of government certification of antibiotics that are well known to the author as Director of the Division of Antibiotics, Food and Drug Administration, United States Department of Health, Education, and Welfare. However, the usefulness of some preparations, such as troches and those containing certain combinations of antibiotics or antibiotics with other drugs, that are legally permitted to be distributed in interstate commerce, is open to question. Despite the uncritical discussion of some formulations, the descriptive information included is both detailed and accurate. For the most part the clinical portions of the book are critically written, although some ophthalmologists may challenge the statement that it is advantageous to combine neomycin, chlortetracycline (Aureomycin), and oxytetracycline (Terramycin) with cortisone for ophthalmic use. The book is generally informative, comprehensive, and useful as an evolutionary survey of antibiotic medication in the United States. It includes several tables and, at the end, a general index. The format is clear; the paper and binding are of good quality. All workers in the field of antibiotics, both laboratory and clinical, should find this new book helpful as a reference to early and recent developments in this important branch of therapeutics.

The Meaning of Social Medicine. By Iago Galdston, M.D., Secretary, Medical Information Bureau, New York Academy of Medicine, New York. Cloth. $2.75. Pp. 137. Published for Commonwealth Fund by Harvard University Press, Cambridge 38, Mass., 1954.

Social medicine, as distinguished from socialized medicine, is discussed in regard to its history, significance, and future by the former secretary of the Committee on Medicine and the Changing Order of the New York Academy of Medicine. This book is organized so that its final chapter contains the "quintessence of the argument," while its author states in the foreword "the originality of this work is to be found in the exposition of the argument rather than in its conclusions." Following the last chapter is an addendum, "Social Medicine in England," in which the author more fully explains the difference between social and socialized medicine. Social medicine is, says Dr. Galdston, "a derivative of the progress of medicine itself." It "belongs to that order of important world events which are not deliberately brought about, but simply occur." It is medicine concerned both with healing disease and with making the sick man healthy in mind and in body. It includes a study of the "total man in his total milieu" and is concerned not only with the improvement of preventive medicine and public health, but also with current methods of clinical medicine. Its aim is not to alter but to expand the field of medicine. In his first chapter Dr. Galdston discusses the place of social medicine in medical history and provides diverse definitions of his subject quoted from other proponents of social medicine. Chapter 2 is entitled "The 'Failure' of Modern Medicine." "Medicine," says the author, "has achieved much in the treatment and also in the prevention of specific diseases. *It has, however, failed in the elimination of disease and in the promotion of health.*" (Italics his.) He relates this failure to the growth of etiological medicine, described in chapter 3. He questions "the contention, always implied and often expressed, that bacteria and the other specific noxious agents, toxins, antitoxins, chemotherapeutic agents, antibiotics, and all the other items in the armamentarium of etiological medicine represent and embrace all that is pertinent to the comprehension, diagnosis, cure, and control of disease. Also, that whatsoever remains unknown and unresolved as to, say, cancer or hypertension or psoriasis will become known and will be resolved in quite the same ways in which those things now known and manageable were fathomed and mastered." He does not disclaim the value of these discoveries, but believes that they are stressed to the exclusion of the whole man and that medical technique has taken the place of medical philosophy. "Social medicine promises to be the corrective and the fulfillment of the modern biological sciences," he states.

In the fourth and fifth chapters Dr. Galdston discusses several of the ways in which modern medical methods have not fulfilled the hopes of their originators. Neither the cause of influenza nor the reason for epidemics is conclusively known; meanwhile, the medical progress culminating in this century may be, while decreasing mortality, increasing morbidity. The author lauds the fact that it may now be an old man in his waning years who is taken by pneumonia rather than a young man with his best years ahead, but he believes that these very changes call for the care of social medicine, so that the person healed of disease may be fully restored to normal living. In his climactic final chapter, "Social Medicine and Medical Education," the author contends that stress on disease and the treatment of disease precludes "the Hippocratic concern for health." He states his ideal: ". . . medical education envisaged in the gestalt of social medicine would include all the knowledges now taught: anatomy, histology, physiology, bacteriology, diagnosis, therapy, etc. Their orientation, however, would be radically altered." They would be presented "in relation to the living individual, as they bear upon his adventure of living"; education, therefore, would also have to include "dynamic, as distinct from descriptive, biology and its history; the history of medicine with emphasis on the fundamental ideas which inspired and motivated its different epochs; the sociology of communal life; the elements of anthropology; the elements of individual and group psychology. This curriculum would also include enough of philosophy to enable the student to understand and to deal with the problems of value judgments. For the physician needs must be not only a healer but also a counselor, and this function will be preeminent in social medicine." Social medicine cannot fit into the present form of curative medicine, yet curative medicine has a definite place in social medicine. The author is optimistic about the future of social medicine, because he believes that we are now witnessing a radical change in the practice of medicine. In clinical medicine and surgery, he claims, "the physician is becoming increasingly a middleman between the patient and the diagnostic laboratories . . . on the one hand, and the pharmaceutical houses on the other." This statement is least true, he says, in the fields of pediatrics and psychiatry, which are in the spirit of social medicine. One of Dr. Galdston's final statements is: "social medicine offers not only a logical but a most desirable resolution of the multiplex problems which now beset society and medicine." He and others interested in social medicine, particularly those in Europe, would reach a larger audience in the United States if they would find a substitute term for the adjective social.

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Streptococcal Infections. Edited by Maclyn McCarty. Symposium held at New York Academy of Medicine, February 25 and 26, 1953. Symposia of Section on Microbiology, New York Academy of Medicine, number 7. Cloth. $5. Pp. 218, with illustrations. Columbia University Press, 2960 Broadway, New York 27; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1954.

The advent of the sulfonamides as therapeutic agents for the treatment of streptococcic infection dealt serious blows to fundamental studies of the biology, metabolism, and immunochemistry of the Streptococcus and to the natural history of diseases produced especially by beta hemolytic streptococci belonging to group A (Lancefield). Today many students graduate from medical schools without ever having seen a patient with erysipelas or scarlet fever. Fortunately for those who are interested in the biology of streptococci, there remain a number of investigators, such as Lancefield, Tillett, McCarty, Rammelkamp, Dingle, and others, who have an abiding interest in this field and who are continually advancing knowledge in it. Also it is fortunate that the section on microbiology of the New York Academy of Medicine decided that in 1953 a symposium should be held on streptococcic infections. The proceedings of this symposium, which cover the chemistry, metabolism, immunologic aspects, and the natural history of streptococcic infections and their sequelae, should be read by all medical students, and should be valuable to practicing physicians in bringing them up to date in an area that has been neglected in their thinking since sulfonamides and antibiotics have become commonplace. Physicians owe a great debt to the investigators who have made possible this interesting volume.

Chemical Pathways of Metabolism. Vol. I. Edited by David M. Greenberg. Cloth. $11. Pp. 460, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1954.

This is the first volume of a series dealing with the various intricate facets of biochemistry. Each chapter was written by an expert in the particular phase of metabolism under consideration. The thesis that pervades the book is that a closely similar pattern of chemical change is common to all forms of life. In addition to a discussion of metabolism per se with respect to fats, sterols, and carbohydrates, there are entire chapters devoted to such topics as energy levels in metabolism, enzymes, and the biosynthesis of saccharides. Both those indoctrinated in the intricacies of the "citric acid cycle" and novitiates will find a lucid discussion of the subject by Professor Krebs. The tricarboxylic acid cycle was first proposed in 1937 under the name citric acid cycle to describe the intermediary stages of oxidation of carbohydrate in pigeon breast muscle. All new substantiating evidence in support of the cycle, since its introduction, has been presented. Although biochemistry is an independent specialty, it has proved a valuable auxiliary scientific discipline to practitioners of medicine. Nutritional and metabolic problems have been accorded places of focal attention in view of the general accessibility of varied food products to the general populace, at least in the Western world, and the nutritional problems encountered in the relatively new field of geriatrics. This series on metabolism should help to keep the medical profession abreast of the rapid changes occurring in this branch of biochemistry. Many of these advances have come as a result of such new techniques as the use of radioactive tracer elements and chromatographic analysis in nutritional research.

Spot Tests. Volume I: Inorganic Applications. Volume II: Organic Applications. By Fritz Feigl, Eng., D.Sc., Laboratório da produção mineral, Ministério da agricultura, Rio de Janeiro. Translated by Ralph E. Oesper, Ph.D. Fourth edition. Cloth. $6.50; $6.25. Pp. 518; 436, with illustrations. Elsevier Press, Inc., 402 Lovett Blvd., Houston 6; 155 E. 82nd St., New York 28; 118 Spuistraat, Amsterdam C, Netherlands, 1954.

Fortunately for chemists, Dr. Feigl's zeal in developing new spot tests remains unabated, and he continues to publish his results in revisions of his original monograph. This edition is in two volumes because, for the first time, the material on spot testing organic compounds is extensive enough to require separate treatment. Each volume is complete in itself. Much of the work reported is not published elsewhere, but the work of others is not neglected, and the bibliographies are a valuable feature. The organization of the material is logical, directions for specific tests are clear, and the index appears to be exhaustive. The volumes are handsomely printed and are bound in flexible cloth. Dr. Oesper's translation is so literal that the work is difficult to read. This defect of the translation is made all the more apparent by contrast with the chapter on techniques for spot testing written in simple, idiomatic English by Philip W. West.

Cancer: Diagnosis, Treatment, and Prognosis. By Lauren V. Ackerman, M.D., Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Mo., and Juan A. del Regato, M.D., Director, Penrose Cancer Hospital, Colorado Springs, Colo. Second edition. Cloth. $22.50. Pp. 1201, with 725 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1954.

This second edition is a thorough revision of the first. Certain chapters have been rewritten, and additions have been made to others. Part 1 of the text has an introductory chapter on cancer, and chapters on research (by Michael B. Shimkin), on pathology, on surgery (by Eugene M. Bricker), and on radiotherapy. Part 2 has chapters devoted to cancer of the skin, respiratory and upper digestive systems, digestive tract, genitourinary tract, male genital organs, female genital organs, mammary gland, and eye; tumors of the thyroid, mediastinum, and suprarenal glands; malignant tumors of bone; sarcoma of the soft tissues; Hodgkin's disease; and leukemia. Each cancerous disease is discussed in the general sequence of anatomy, incidence and etiology, pathology, clinical evolution, diagnosis, radiological and surgical treatment, and prognosis. The text has many charts, drawings, photographs, photomicrographs, and color reproductions. Many of the photographs and photomicrographs are of good quality. The broad scope of the text has resulted in a large book, which could be reduced in size without loss of essentials, by elimination of illustrations that are highly diagrammatic and by condensation or deletion of parts of the text. The book is recommended to pathologists, surgeons, and radiologists.

Anatomy of the Bronchovascular System: Its Application to Surgery. By George L. Birnbaum, M.D., Chief, Surgical Unit, Veterans Administration Regional Office, Portland, Ore. Foreword by Evarts A. Graham, M.D. Cloth. $15. Pp. 300, with illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1954.

This monograph is thorough and competent. The anatomy of the tracheobronchial tree is discussed in minute detail with all of the possible variations. Similarly, the pulmonary vessels, both arterial and venous, are minutely considered, with the surgical application being paramount in each instance. Anomalies of the heart, pulmonary vessels, and other large vessels are considered together with the surgical application and surgical treatment. The book is well illustrated. There is an excellent chapter on experimental pulmonary vascular and experimental tracheobronchial operations and a complete chapter on the use of surgery for treating asthma. The last chapter consists of drawings from an original atlas of the pulmonary arteries and veins, based on 50 lungs from adult males, the dissection apparently having been done by the author. The monograph is an excellent reference book and should be in the library of everyone interested in cardiopulmonary disease.

The Macmillan Medical Dictionary. Edited by Sir Cecil Wakeley, Bt., K.B.E., C.B. [Published in England under title of "The Faber Medical Dictionary."] Cloth. $6.95. Pp. 471. The Macmillan Company, 60 Fifth Ave., New York 11, 1954.

Although there are several good English medical dictionaries, a new one is always welcome. This medical dictionary includes a number of good features: the definitions are clear and concise without involving obscure terms and unfamiliar words, most of them appear where one would first look for them, pronunciation is indicated simply, and derivations are given. A number of terms in frequent use have been omitted, such as nitrogen mustard, Papanicolaou technique, citrovorum factor, vectorcardiography, Sjögren's syndrome, and ventricular fibrillation. Since this dictionary is published in England as "The Faber Medical Dictionary," it was intended chiefly for British use, and in many instances the user may expect to find

British terms rather than those accepted in the United States. He also must remember that diphthongs change the spelling of familiar words, so that etiology becomes aetiology, all words beginning with "hem" are under "haem," and edema and esophagus appear under the letter "O." However, as a supplementary reference work this dictionary should prove useful to the physician and especially to lay workers in the field of medicine who require only brief definitions and a limited coverage of medical terms.

Biological Applications of Freezing and Drying. Edited by R. J. C. Harris, Research Fellow, British Empire Cancer Campaign, Institute of Cancer Research, London, England. Cloth. $10. Pp. 415, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1954.

This book gives a comprehensive report on various aspects of drying and related fields and, in particular, drying from the frozen state. Both theoretical and practical aspects are covered thoroughly. The topics discussed include historical background and development, theoretical and practical aspects, the preservation of blood products, antibiotics, mother's milk, foodstuffs, culture mediums, bacteria, viruses, and tissues. Other subjects are discussed in chapters on "The Effects of Residual Moisture in Frozen-Dried Material," "The Application of Freeze-Drying to Electron Microscopy," "Application in Morphological and Histological Studies of Tissues," and "Effects of Low Temperatures on Living Cells and Tissues." The topics are presented clearly. Various types of equipment are illustrated, and the critical conditions are evaluated. This book is highly recommended to anyone who wishes an introduction to this subject as well as to those who wish to add to their knowledge of it. It should also be valuable as a reference, as it is both authoritative and comprehensive. An author index and a subject index are appended.

The Kinetic Basis of Molecular Biology. By Frank H. Johnson, Henry Eyring and Milton J. Polissar. Cloth. $15. Pp. 874, with illustrations. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, England, 1954.

The authors set forth the logical consequences of the hypothesis that two molecules in reacting chemically first form an "activated complex" or intermediate molecule with an average lifetime of the order of one ten-trillionth of a second. An opening chapter traces the history of experimentation and speculation, beginning with the work of Arrhenius in 1889. The remaining chapters explain the implications of the hypothesis in the biochemistry of luminescence, temperature effects, pressure effects, membrane potentials, transmission of nerve fibers, narcosis by anesthetics, and muscular contraction. The discussion is exhaustive and scholarly, and a reader who wishes to follow all of the text will find he needs a command of mathematics well beyond differential and integral calculus. An accurate bibliography, alphabetically arranged by authors' names, also serves as an author index, covers 85 pages, and is followed by a subject index. This book will be a necessary reference work for anyone doing fundamental research in biochemistry or biophysics.

Clinical Chemistry in Practical Medicine. By C. P. Stewart, D.Sc., Ph.D., Senior Biochemist, Royal Infirmary, Edinburgh, and D. M. Dunlop, B.A., M.D., F.R.C.P., Christison Professor of Therapeutics and Clinical Medicine, University of Edinburgh. Fourth edition. Cloth. $5. Pp. 320, with 27 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, Scotland, 1954.

In this book some space is devoted to a discussion of the meaning and statistical interpretation of normal values and to methods for the proper collection and preservation of body fluids to be tested by chemical methods. Succeeding chapters deal with water, electrolyte, and carbohydrate metabolism; tests of renal function; proteins of the blood plasma; tests of gastric, pancreatic, and hepatic functions; the cerebrospinal fluid; thyroid function; calcium and phosphorus; hormone abnormalities; and nutritional deficiencies. Two appendixes at the end provide (1) the specific procedures employed for the examination of the urine, including its quantitative analysis, and examination of gastric contents, blood, and feces, and (2) tables indicating normal and abnormal values for constituents of the urine and blood, respectively. Under the heading simple hematological examination, customary methods are described for determining the number and percentage of the formed elements. Although this book departs from medical biochemistry in minor respects, it cannot be regarded as adequate to replace books that cover the entire subjects of either biochemistry or clinical laboratory medicine. This will limit its usefulness except as a convenient supplement to larger works or in conjunction with separately presented courses dealing with biochemical procedures used in the clinical laboratory. The printing is excellent, and the binding is reasonably sturdy. The spelling of terms follows British custom. There is a general index at the end.

An Introduction to Bacterial Physiology. By Evelyn L. Oginsky and Wayne W. Umbreit. Cloth. Text, $6; trade, $7.25. Pp. 404, with 94 illustrations; including drawings by Evan L. Gillespie. W. H. Freeman and Company, 549 Market St., San Francisco 5, 1954.

The complexity of technical information presented in modern textbooks on bacterial physiology has precluded their general use by undergraduate students. The authors have designed this book to bridge the existing gap between general bacteriology and the more advanced information on bacterial physiology. The opening chapters are devoted to pertinent discussions on methods used in science, bacterial anatomy, and bacterial cytology and cytochemistry. Bacterial physiology is introduced in a section on population studies. Here the relations between organisms and their environment are brought out in discussions on growth, nutrition, genetics, and effects of chemical and physical agents. The fundamental principles of metabolism and the main lines of metabolic processes are treated in the next section. Details of reactions have been omitted as not within the scope of this book. Two interesting chapters follow on the physiology of organisms designated by the authors as The Self Reliants and The Dependents. The former are the chemosynthetic and photosynthetic organisms that are capable of utilizing inorganic materials, carbon dioxide, or light as their sole source of energy. The Dependents, which include bacteriophages, viruses, and rickettsia, must rely on living processes of other cells for their existence. The final section is concerned with the functions of the bacterial cell in changing environments. An annotated bibliography and a list of questions intended to stimulate the thinking of the reader are appended to each chapter. The authors have presented the subject matter in an attractive and readable form.

Social Science in Medicine. By Leo W. Simmons, Professor of Sociology, Yale University, New Haven, Conn., and Harold G. Wolff, Professor of Medicine (Neurology) Cornell University Medical College, New York. Cloth. $3.50. Pp. 254, Russell Sage Foundation, 505 Park Ave., New York 22, 1954.

Although the medical profession has never been unmindful of the relationship of social environment to illness, until relatively recently the related disciplines of sociology, social psychology, and social anthropology have been inadequately harnessed for purposes of medical research and practice. That these disciplines have now advanced to a point where fruitful collaboration between medical and social scientists is feasible is made evident by this book, which is itself the product of collaboration between a sociologist and a physician. The authors view the individual as an organism in his physical surroundings, as a group member in his society, and as a person in his culture and relate the impact of these surroundings to health and disease. They offer a framework for collaboration between medical and social science by clarifying social science concepts that have a bearing on medical practice and stress the need for research in the two fields. This book should prove useful to students in medicine and the social sciences, to lay persons who share responsibility for health and welfare programs, and to medical administrators, educators, public health officials, social workers, and nurses interested in the prevention and treatment of disease.

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QUERIES AND MINOR NOTES

BUS DRIVERS AND CORONARY OCCLUSIONS

TO THE EDITOR:—*What is the prevailing opinion about returning to work a 50-year-old, slightly hypertensive stage driver who weighs 200 lb. (90.7 kg.) and is 5 ft. 9 in. (175.26 cm.) tall and who is required to drive a bus loaded with passengers on a highway for a six hour run? This man had a severe coronary occlusion two years ago and at present claims to be symptom-free, and his electrocardiographic changes have reverted virtually to normal.* *M.D., Oregon.*

ANSWER.—There is no prevailing opinion about such a problem, because it depends on the person's response. Exercise tolerance tests should be performed to determine the capacity to do work. An ideal course would be to test the patient repeatedly when he had resumed his activity, possibly comparing his performance at the beginning of the week, before a day's work, after the first day's work, and at the end of the week following the last day at work. Only in this manner could an accurate conclusion be reached. The intelligence of the patient enters into the picture. If he is an easily harrassed person of the emotional type, it would probably not be advisable to restore him to his original duties. However, if he were properly advised not to be hurried and not to make frequent jerking pulls on the steering wheel, he probably would be able to resume his previous occupation, since he is physically endowed with musculature that will permit him to do such work. The public liability risk is a difficult question to answer. It cannot be denied that the patient who has had a cardiac infarct once is more liable to have a second attack. However, the liability is least two years after an attack and becomes progressively greater until the next attack ensues. The question to decide under this circumstance would be whether the patient is a cooperative patient of such intelligence to carry out a reasonable program for preventing further attacks that involves certain dietary measures, evaluation of the recurrence of the symptoms of angina, and other therapeutic measures. Certainly, if all patients liable to heart attacks, cerebrovascular accidents, diabetic coma, and acute colic from calculi are deprived of their means of earning a living by eliminating all possible risks of public liability, the burden on our national economy will be great, and probably unjustifiably so. If the laws of the state of Oregon would permit the bus company to be penalized should such an accident occur, there is no other course for the bus company to follow than to refuse to hire the driver. If there are no such laws, he could be restored to work without undue criticism with a program of check-ups while on the job and a careful examination twice yearly. Railroad engineers have similar problems except for being harried by intimate contact with the passengers. Comparison with the railroad engineer brings up the question of the liability of the bus company for not developing a device that would shut off the engine and gradually apply the brakes if the driver suddenly becomes incapacitated.

SERUM SODIUM AND POTASSIUM DETERMINATION

TO THE EDITOR:—*Which apparatus, the Perkin-Elmer model 53-C, flame photometer or the spectrophotometer, Beckman model B, flame, is the better for the determination of sodium and potassium in the serum?*

Salvador Urzua L., M.D., Guadalajara, Jalisco, Mexico

ANSWER.—Both instruments mentioned are entirely satisfactory for the estimation of plasma or serum sodium and potassium. The Perkin-Elmer instrument uses an internal standard, which may be of advantage under certain circumstances. Comparisons of the two instruments indicate that both give results that are reproducible and in good agreement when the procedure is properly standardized with solutions of known composition.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

ACRYLIC IMPLANTS

TO THE EDITOR:—*What is the present accepted opinion concerning the adaptability of acrylics as implants to correct defects? Are acrylics tolerated by the body tissues without foreign body reaction?* *Robert M. Colbert, M.D., Beverly Hills, Calif.*

ANSWER.—These questions in our present state of knowledge cannot be satisfactorily answered. Among the plastics that have been used within the human body are methyl methacrylate, acrylic, polyvinylpyrolidone, polyethylene, and nylon. Plastic materials vary widely in method of manufacture and may contain substantial amounts of plasticizers or additional chemicals. Their physical and other properties vary widely, and two different lots made by the same manufacturer are often far from identical. The surgeon must realize that acrylics or other plastic materials used in the human body are nonstandardized materials. Clinical experience with plastics in the human body gives conflicting evidence. Intraocular acrylic lenses have been used as a substitute for the lens of the eye for the past three and a half years, and over 150 successful operations have been reported, without evidence of excessive foreign body reaction. A plastic heart valve (Hufnagel) has been designed and used successfully in a number of patients, with apparently satisfactory two year results. The use of an acrylic replacement for the femoral head, recommended first by Judet, was accepted enthusiastically by American surgeons, but studies of end-results have shown a high percentage of failure due to sepsis, foreign body reaction, breakage, or excessive wear. Most of the larger clinics and hospitals have stopped using plastics for this purpose. Recently Oppenheimer has produced malignant tumors in the rat by implanting plastics of various types. There are no reported cases of malignant growths developing in a human being from the use of plastics, but excessive foreign body reactions may follow their use. There is no standard method of measuring foreign body reaction. The use of any plastic material in the human body must be regarded as an experimental procedure. Such materials should be controlled by careful physical, chemical, and animal tests before they are used in the human body.

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ERYTHEMATOUS LESION OF NOSE

TO THE EDITOR:—*A woman with an erythematous maculopapular lesion over the tip of the nose and a small, similar lesion in the nasolabial fold first noticed lesions of this type in the same location eight years ago. Because her physician was suspicious of this being tuberculous, she was hospitalized. An internist found no evidence of tuberculosis, and a dermatologist was consulted. He prescribed several remedies, but with the passage of time it became apparent that the lesions would appear only when this patient was exposed to sunlight or to heat, as when she cooked over a hot stove. For eight years she has been entirely free of lesions in the winter if someone else does her cooking, but this year, as in the past, on the first day that the sun was bright and she spent an hour outside hanging up her wash the lesions returned. I presume this is some type of physical allergy. The lesions are smaller and less erythematous since we have been prescribing cortisone ointment locally. Is there any other treatment for this condition?* *M.D., Pennsylvania.*

ANSWER.—Heliodermatitis, localized lupus erythematosus, and dermatitis due to heat are possibilities in this case. A histological examination might furnish useful information, but in any event the application of a sun-screen ointment or lotion would be worth while. Any product accepted by the Committee on Cosmetics of the American Medical Association would be suitable, as would 15% *p*-aminobenzoic acid in cold cream.

PYKNOLEPSY

To the Editor:—*If a 10-year-old girl with pyknolepsy does not have attacks frequently enough to interfere with schoolwork, play, and other activities, is it necessary to give her anticonvulsant drugs? Is there any danger of untreated attacks altering the patient's prognosis, which is usually favorable after puberty? What drugs are available for the control of pyknoleptic attacks and what are the criteria for choosing one of these drugs, considering the therapeutic goal to be achieved and the toxic hazards in its use?* *M.D., Michigan.*

Answer.—In general, epileptic seizures of any sort should be banished. If the child does not have daily attacks, the diagnosis of pyknolepsy (petits or petit mal) is questionable, especially if not confirmed by the demonstration of three-per-second spike-wave formations in the electroencephalogram. If attacks do recur daily, an accident while the girl is crossing the street or swimming is possible. If attacks persist through adolescence, problems related to automobile driving and social acceptance will then multiply. Theoretically at least, the underlying dysrhythmia and the attacks are controlled more easily if treated early. When petit mal occurs alone, convulsions follow in later months or years in about one-half of the patients. Possibly this is more likely if the petit mal attacks and the attending dysrhythmia have not been disposed of, especially if the spike-wave formations display multiple spikes. Anticonvulsants are of little or no value for control. On the other hand, some of the antipetit-mal, or spike-wave, drugs may at times augment convulsions. Available drugs for which favorable results have been reported are, in the order of decreasing effectiveness: trimethadione (Tridione), paramethadione (Paradione), phenacemide (Phenurone), Milontin (*N*-methyl-α-phenylsuccinimide), Diamox (sulfonamide inhibitor of carbonic anhydrase), quinacrine (Atabrine), caffeine, amphetamine, mephobarbital (Mebaral), and glutamic acid. The first three require close and conscientious supervision. The ketogenic diet may be used alone or combined with a drug. For other opinions and for details of administration, recent literature should be consulted.

CAFFEINE IN BEVERAGES

To the Editor:—*In answering a patient's queries in regard to beverages for nervous children, I would like information as to which carbonated beverages contain caffeine and the approximate amount of caffeine in each. Beverages common in this locality are Coca-Cola, Dr. Pepper, 7-Up, Pepsi-Cola.* *M.D., Texas.*

Answer.—According to information in the files of the Council on Foods and Nutrition, all cola-type carbonated beverages contain caffeine. The average is probably around 40 mg. per 6 oz. (about 177 ml.). This compares with about 120 mg. per cup for average coffee. Of those beverages mentioned, Coca-Cola and Pepsi-Cola are the only ones containing caffeine. Both Dr. Pepper and 7-Up contain fruit flavoring, which presumably has no caffeine.

BILIARY CALCULI

To the Editor:—*A 23-year-old uniparous woman recently underwent laporatomy because of acute upper abdominal pain. Acute pancreatitis was discovered. About six weeks later autopsy revealed a mulberry calculus, 1.5 cm. in diameter, containing radiate yellow-brown striations. Is it possible that this calculus developed between the operation and the autopsy? What is the duration of the development period of pure, mixed, and combined biliary calculi?* *M.D., Pennsylvania.*

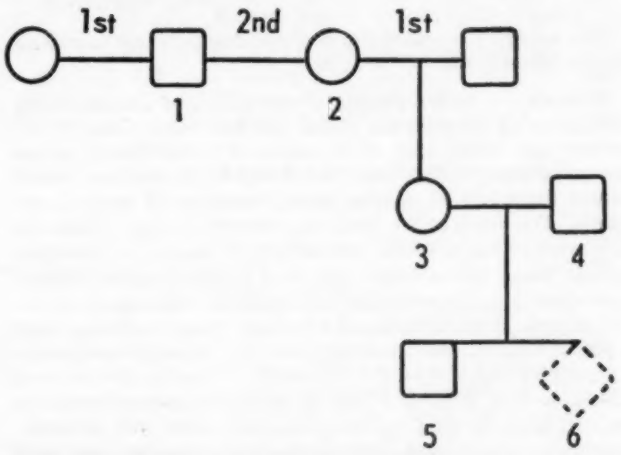
Answer.—The location of the mulberry-shaped gallstone found at autopsy is not given; it probably was present at the time of the laparotomy and was a causative factor of the acute pancreatitis. Biliary calculi vary greatly in the time required for their development. Among the factors that determine their development are the nature and quantities of the materials coming from the liver, the pH of the bile, the concentrating ability of the gallbladder, the size of the extrahepatic ducts, and the presence or absence of obstruction and infection of the ducts.

MARITAL RELATIONSHIPS

To the Editor:—*Kindly let me know the marital relationship of these persons: A widower (1) marries a widow (2) who is the mother of one married daughter (3) whose husband (4) and herself (3) are parents of a young boy (5) and expecting another child in the future (6). What are the relationships of daughter (3) and her husband (4) and young boy (5) to this man (1)? There is nothing of a legal nature involved in this situation. Also what will be the relationship of newcomer (6) to this man?* *A. E. Wanderer, M.D., Oak Park, Ill.*

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—The relationships between the persons mentioned in the question may be readily visualized with the aid of the following diagram:



It may be seen from this diagram that persons no. 3, 4, 5, and 6 are not biologically related to person no. 1, but that 1 is related to 3 as stepfather to stepdaughter; 1 is related to 4 as stepfather-in-law to stepson-in-law; and 1 is related to 5 and 6 as stepgrandfather to stepgrandchild. The degree to which civil law recognizes these latter relationships varies considerably from state to state, but, as a general rule, the last two relationships are unrecognized whereas with regard to the first it may be stated that the legal rights of a stepchild, with respect to a stepparent, are less than the legal rights of an adopted child with respect to a foster parent. Canon law, on the other hand, is somewhat more specific, although these relationships are defined only with respect to the act of marriage. Canon law proscribes marriage between persons related as 1 and 3, but where sex of the persons involved is appropriate, there is no proscription on persons related as 1 and 4 or 1 and 5.

Answer.—Person no. 3 is the stepdaughter of person no. 1. The only relationship that 4 can claim is that of husband of the stepdaughter. The relationship of 5 and the prospective 6 is that of stepgrandchildren, but such a relationship has no real meaning.

UROGRAPHY

To the Editor:—*Is there any preparation that is orally administered for urography today?* *L. Edward Giovine, M.D., Woodside, N. Y.*

Answer.—There is no preparation for urography that can be administered orally. The original excretory urographic medium, which was marketed under the name Uroselectan (sodium 5-iodo-2-pyridone-*N*-acetate), and iodohippurate sodium (Hippuran), were absorbed from the gastrointestinal tract when either taken by mouth or administered by rectum and were excreted by the kidneys in concentrations that would yield satisfactory excretory pyelograms in a majority of instances. When the contrast medium was administered by either of these routes, however, its rate of absorption and urinary concentration was variable, so that the method never received widespread acceptance.

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DEFORMITIES IN STILLBORN INFANT

To the Editor:—*A primipara recently was delivered of a dead, deformed baby. She and her husband are in excellent health. They are both in their early 30's, both have Rh positive blood, and neither of them has had a venereal disease. The infant died about two days before delivery. The deformities consisted of: absence of nose, cleft palate, and harelip. There was no history in either family of any deformed babies. The husband's sperm count was 350 million spermatozoa per cubic centimeter with 25% actively motile, 15% sluggishly motile, and 60% nonmotile. About 50% showed morphological abnormality. There were 4 to 8 epithelial cells and 2 to 10 pus cells per high power field. 1. What could be the reason for the infant's deformity and death? 2. What are the chances of future abnormal infants? 3. Is there any treatment to improve the condition of the spermatozoa?*

M.D., Washington.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—1. In the absence of any history of communicable disease during the gestation period, the deformities found in the present case would have to be attributed to hereditary factors governing fetal development. The principal difficulty experienced here is the failure of midline fusion, the cause of which is not known. The death of the fetus may have been due to defect in formation or fusion of the internal organs, such as a horseshoe kidney. These factors might have been revealed had an autopsy been done. 2. It is possible but still unproved that a sperm defective in some characteristics can be potent enough to bring about a pregnancy. It is entirely conjectural how far such a pregnancy will proceed and, if it should go to term, whether or not the fetus will be normal. Whether or not the nonmotile sperm population has any effect on the pregnancy cannot be stated with certainty inasmuch as the effect of the metabolic products of such sperm on fertilization, nidation, and gestation has not yet been determined. If an imperfect sperm successfully fertilizes a normal ovum or if one of the normal sperm fertilizes an imperfect ovum, abnormalities are possible. 3. The husband should be treated with a diet rich in vitamins and trace minerals. Supplementary vitamins B complex and C are frequently useful. Thyroid extract is indicated if hypothyroidism is apparent. Coital frequency and technique should be reviewed and adjusted, and instruction should be given in hygienic living habits.

Answer.—1. The case history reveals no apparent reason for the infant's deformity and death. It is not stated whether there was any acute illness in the first trimester of this patient's pregnancy. From a recent report by Drs. Kaye, Rosner, and Stein (*Am. J. Obst. & Gynec.* **65**:109 [Jan.] 1953), the most pertinent factor in similar abnormalities was viral diseases. Although rubella has been the chief viral disease implicated in such abnormalities, other viral diseases, especially mumps, may cause similar involvement. There is no evidence that 50% abnormal spermatozoa in semen has any bearing on the outcome of the pregnancy. Abnormal spermatozoa are incapable of fertilizing ova. 2. This patient runs no greater risk of future abnormal pregnancies than does any other multiparous woman. 3. The only treatment that is suggested for the husband would be improvement of general hygienic habits, high vitamin and high protein diet, and thyroid if indicated. He should be strongly advised to stop smoking for at least one month prior to attempting impregnation.

RETINAL HEMORRHAGE

To the Editor:—*Is retinal hemorrhage ever due to exposure to chlorinated aromatics, such as Halowax or chlorinated diphenyl?*

M.D., Indiana.

Answer.—Retinal hemorrhage is not known to be a characteristic response to the action of any chlorinated aromatics. The chemicals mentioned possess distinctly harmful properties, but these properties lead to yellow atrophy of the liver or to chloracne as predominant features. If, as is conceivable, retinal hemorrhage did arise in the course of widespread damage, more characteristic injury would have occurred prior to the retinal hemorrhage and would have attracted diagnostic consideration.

EXTREME MALNUTRITION

To the Editor:—*I recently saw a 7-year-old boy who weighed 11 lb. (4,989 gm.). This child was the ninth of 12 children. The mother received no prenatal care but was delivered by a physician. The mother was 32 years old when she delivered the child, and the father was 52 years old. There was no history of birth injury. The patient is unable to sit up and retain food. When he was admitted to the hospital on Dec. 1, 1949, he weighed 8 lb. (3,628 gm.), and when he returned from the hospital on Jan. 8, 1950, he weighed 11 lb. 12 oz. (5,330 gm.). His diet on discharge consisted chiefly of soybean emulsion, which he retained. He appeared to be improving physically and mentally. On May 10, 1950, he weighed 14 lb. 3 oz. (6,436 gm.). The diagnosis at the orthopedic clinic, June 2, 1950, was malnutrition, retarded development, mild talipes equinus varus bilaterally, and mental retardation. The child continued to retrogress. Living conditions were bad; the home and child were usually dirty. On Dec. 22, 1953, the child was in extremely bad condition and not eating. He was hospitalized from Dec. 23, 1953, to Jan. 7, 1954, and put on a diet of soy bean emulsion, vegetables, fruit juices, and cereals. The mother again tried to follow instructions. On March 17, 1954, the child weighed 11 lb. 4 oz. (5,141 gm.). Other children in the family are apparently normal. What is the diagnosis?*

M.D., Virginia.

Answer.—Without knowing the measurements of this child and additional data, it is impossible to arrive at a satisfactory diagnosis. Children suffering from premature senility, otherwise called progeria (Thomson and Forfar: *Arch. Dis. Childhood* **25**:224 [Sept.] 1950) fail to grow normally but usually grow more than the child described. Also, the prematurely senile child is usually normal mentally. The smallest child seen by this consultant weighed 10 lb. (4,536 gm.) at 2½; 19 lb. (8,618 gm.) at 7; and 24 lb. (10,886 gm.) at 10 years of age. Another child weighed less than 20 lb. (9,072 gm.) at 23 years of age. At this time it was still in a crib and was being fed from a bottle. Both children were inmates of institutions for the care of the feebleminded. Extremely limited growth is so uncommon that no figures are available regarding its frequency.

ENLARGED OVARY

To the Editor:—*In* The Journal *for Aug. 7, 1954, page 1378, a physician inquires what to do with a woman 41 years of age who has an enlarged ovary. I take exception to the answer given in several particulars. Generally, most ovarian swellings are corpus luteum cysts and disappear of their own accord. If, however, they remain after eight weeks and particularly if the ovary enlarges, then the patient should be operated on. I agree with you that a specialist in vaginal surgery may occasionally open the cul-de-sac and examine the ovarian swelling and that if it proves to be a simple cyst the contents may be aspirated and the cyst resected. However, the inability of a surgeon to do what is indicated is never an excuse for him to do other surgery simply because he cannot perform a particular operation. The abdomen should not be entered, however, with the preconception that the ovary has to be removed, for the swelling may prove to be a resectable tubo-ovarian cyst of inflammatory origin or a simple cyst, a dermoid, or a cyst produced by an endometrioma, all of which are capable of resection and do not necessarily require removal of the ovary. Particularly is it inadvisable to open a tumor that may prove to be malignant; such a tumor should be removed, if its nature cannot be determined, and its malignancy determined in the laboratory.*

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